

Institute for
Interlaboratory Studies

Results of Proficiency Test Fuel Oil December 2023

Organized by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

Author: Mrs. G.A. Oosterlaken-Buijs,
Correctors: Mr. M. Meijer, BSc & Mr. R.J. Starink, BSc
Approved by: Mr. R.J. Starink, BSc

Report: iis23F03

March 2024

CONTENTS

1 INTRODUCTION 3

2 SET UP 3

2.1 ACCREDITATION..... 3

2.2 PROTOCOL..... 4

2.3 CONFIDENTIALITY STATEMENT 4

2.4 SAMPLES 4

2.5 STABILITY OF THE SAMPLES..... 7

2.6 ANALYZES 7

3 RESULTS..... 8

3.1 STATISTICS 8

3.2 GRAPHICS 9

3.3 Z-SCORES..... 10

4 EVALUATION 10

4.1 EVALUATION PER SAMPLE AND PER TEST 11

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES..... 16

4.3 COMPARISON OF THE PROFICIENCY TEST OF DECEMBER 2023 WITH PREVIOUS PTS 18

Appendices:

1. Data, statistical and graphic results 21

2. Number of participants per country..... 134

3. Abbreviations and literature 135

1 INTRODUCTION

Since 1994 the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for the analysis of Fuel Oil based on the latest version of ISO8217 and ASTM D396 twice per year. During the annual proficiency testing program of 2023 it was decided to continue the round robin for the analysis of Fuel Oil.

In this interlaboratory study registered for participation:

- 143 laboratories in 62 countries for regular analyzes in Fuel Oil iis23F03
- 103 laboratories in 48 countries on the Metal analyzes iis23F03M
- 54 laboratories in 26 countries on the Bromine and P-value analyzes iis23F03Br
- 62 laboratories in 34 countries on the Compatibility analyzes iis23F03C

In total 156 laboratories in 64 countries registered for participation in one or more proficiency tests, see appendix 2 for the number of participants per country. In this report the results of the Fuel Oil proficiency tests are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organizer of this proficiency test (PT). Sample analyzes for fit-for-use and homogeneity testing were subcontracted to a laboratory that has performed the tests in accordance with for ISO/IEC17043 relevant requirements of ISO/IEC17025.

In this proficiency test the participants received, depending on the registration, from one up to four different samples of Fuel Oil, see table below.

Sample ID	PT ID	Quantity	Purpose
#23275	iis23F03	1x 1 L	Regular analyzes
#23276	iis23F03M	1x 100 mL	Metals
#23277	iis23F03Br	1x 1 L	Bromine and P-value
#23278	iis23F03C	2x 40 mL	Compatibility

Table 1: Fuel Oil samples used in PT iis23F03

Participants were requested to report rounded and unrounded test results. The unrounded test results were preferably used for statistical evaluation.

2.1 ACCREDITATION

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, is accredited in agreement with ISO/IEC17043:2010 (R007), since January 2000, by the Dutch Accreditation Council (Raad voor Accreditatie). This PT falls under the accredited scope. This ensures strict adherence to protocols for sample preparation and statistical evaluation and 100% confidentiality of participant's data. Feedback from the participants on the reported data is encouraged and customer's satisfaction is measured on regular basis by sending out questionnaires.

2.2 PROTOCOL

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of June 2018 (iis-protocol, version 3.5). This protocol is electronically available through the iis website www.iisnl.com, from the FAQ page.

2.3 CONFIDENTIALITY STATEMENT

All data presented in this report must be regarded as confidential and for use by the participating companies only. Disclosure of the information in this report is only allowed by means of the entire report. Use of the contents of this report for third parties is only allowed by written permission of the Institute for Interlaboratory Studies. Disclosure of the identity of one or more of the participating companies will be done only after receipt of a written agreement of the companies involved.

2.4 SAMPLES

For the preparation of the sample for the regular analyzes in Fuel Oil a batch of approximately 200 liters Fuel Oil was obtained from a third party. After homogenization 185 amber glass bottles of 1 L were filled and labelled #23275.

The homogeneity of the subsamples was checked by determination of Density at 15 °C in accordance with ISO12185 on 8 stratified randomly selected subsamples.

	Density at 15 °C in kg/m ³
sample #23275-1	1007.9
sample #23275-2	1008.0
sample #23275-3	1007.7
sample #23275-4	1007.8
sample #23275-5	1007.8
sample #23275-6	1007.8
sample #23275-7	1007.8
sample #23275-8	1007.8

Table 2: homogeneity test results of subsamples #23275

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Density at 15 °C in kg/m ³
r (observed)	0.2
reference test method	ISO12185:96
0.3 x R (reference test method)	0.5

Table 3: evaluation of the repeatability of subsamples #23275

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

For the preparation of the sample for the analyzes of Metals in Fuel Oil a batch of approximately 15 liters of Fuel Oil which contains several metals was obtained from a third party. After homogenization 135 PE bottles of 100 mL were filled and labelled #23276. The homogeneity of the subsamples was checked by determination of Nickel and Vanadium in accordance with IP501 on 8 stratified randomly selected subsamples.

	Nickel in mg/kg	Vanadium in mg/kg
sample #23276-1	18.0	37.6
sample #23276-2	17.3	37.8
sample #23276-3	16.4	36.0
sample #23276-4	16.4	35.4
sample #23276-5	18.2	35.0
sample #23276-6	16.4	35.9
sample #23276-7	16.4	36.2
sample #23276-8	16.5	35.8

Table 4: homogeneity test results of subsamples #23276

From the above test results the repeatabilities were calculated and compared with 0.3 times the corresponding reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Nickel in mg/kg	Vanadium in mg/kg
r (observed)	2.2	2.8
reference test method	IP470:05	IP470:05
0.3 x R (reference test method)	3.3	5.9

Table 5: evaluation of the repeatabilities of subsamples #23276

The calculated repeatabilities are in agreement with 0.3 times the corresponding reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

For the preparation of the sample for the analyzes of Bromine and P-value in Fuel Oil a batch of approximately 130 liters of Fuel Oil was obtained from a third party. After homogenization 70 amber glass bottles of 1 L were filled and labelled #23277.

The homogeneity of the subsamples was checked by determination of Density at 15 °C in accordance with ISO12185 on 8 stratified randomly selected subsamples.

	Density at 15 °C in kg/m ³
sample #23277-1	987.1
sample #23277-2	986.9
sample #23277-3	986.9
sample #23277-4	987.1
sample #23277-5	987.1
sample #23277-6	987.1
sample #23277-7	987.1
sample #23277-8	987.1

Table 6: homogeneity test results of subsamples #23277

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Density at 15 °C in kg/m ³
r (observed)	0.3
reference test method	ISO12185:96
0.3 x R (reference test method)	0.5

Table 7: evaluation of the repeatability of subsamples #23277

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

For the preparation of the sample for the Compatibility Determination two different batches A and B of Fuel Oil, which were not compatible, of approximately 5 liters each were obtained from a third party. After homogenization 80 amber glass vials of 40 mL were filled with batch A and 80 amber glass vials of 40 mL were filled with batch B, respectively labelled A and B and all labelled #23278. One subsample A and one subsample B were put together in a plastic bag and the bag was labelled #23278. The homogeneity of subsamples A and B was checked by determination of Density at 15 °C in accordance with ISO12185 on respectively 8 stratified randomly selected subsamples.

	Sample A - Density at 15 °C in kg/m ³	Sample B - Density at 15 °C in kg/m ³
sample #23278-1	0.9900	0.9939
sample #23278-2	0.9899	0.9939
sample #23278-3	0.9898	0.9940
sample #23278-4	0.9898	0.9939
sample #23278-5	0.9898	0.9940
sample #23278-6	0.9902	0.9940
sample #23278-7	0.9901	0.9940
sample #23278-8	0.9899	0.9940

Table 8: homogeneity test results of subsamples #23278

From the above test results the repeatabilities were calculated and compared with 0.3 times the corresponding reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Sample A - Density at 15 °C in kg/m ³	Sample B - Density at 15 °C in kg/m ³
r (observed)	0.4	0.1
reference test method	ISO12185:96	ISO12185:96
0.3 x R (reference test method)	0.5	0.5

Table 9: evaluation of the repeatabilities of subsamples #23278

The calculated repeatabilities are in agreement with 0.3 times the corresponding reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

Depending on the registration of the participant the appropriate set of PT samples was sent on November 22, 2023. An SDS was added to the sample package.

2.5 STABILITY OF THE SAMPLES

The stability of Fuel Oil packed in the amber glass and PE bottles was checked. The material was found sufficiently stable for the period of the proficiency test.

2.6 ANALYZES

The participants were requested to determine on sample #23275: Total Acid Number, API Gravity, Ash Content, Asphaltenes, Calculated Carbon Aromaticity Index, Carbon Residue micro method, Conradson Carbon Residue, Density at 15 °C, Flash Point PMcc, Heat of Combustion (Gross and Net), Hydrogen Sulfide, Kinematic Viscosity at 50 °C and 100 °C, Kinematic Viscosity Stabinger at 50 °C and 100 °C, Nitrogen, Pour Point (Lower, Upper and Automated), Sediment by Extraction, Total Sediment (Existent, Accelerated and Potential), Total Sulfur, Water by distillation, Water and Sediment, Vacuum Distillation at 10 mmHg but reported as AET (IBP, 5%, 10%, 20%, 30%, 40%, 50% recovered and FBP), Total Carbon, Total Hydrogen and Total Nitrogen (CHN Analysis). Also, some extra information was requested about the determination of Total Acid Number.

On sample #23276 it was requested to determine Aluminum as Al, Silicon as Si, Sum Aluminum and Silicon, Iron as Fe, Nickel as Ni, Sodium as Na, Vanadium as V, Calcium as Ca, Phosphorus as P and Zinc as Zn.

On sample #23277 it was requested to determine Bromine Number on distillate <360 °C AET, P-value SMS1600, P-ratio, FR_{max} and Po (D7060), P-value, Pa, Po, SE and $FR_{5/1}$ (D7112), Separability Number and Toluene dilution ratio (D7061).

On sample #23278 it was requested to determine the Compatibility rating. Also, some extra information was requested about the determination of Compatibility.

It was explicitly requested to treat the samples as if they were routine samples and to report the test results using the indicated units on the report form and not to round the test results, but report as much significant figures as possible. It was also requested not to report 'less than' test results, which are above the detection limit, because such test results cannot be used for meaningful statistical evaluations.

To get comparable test results a detailed report form and a letter of instructions are prepared. On the report form the reporting units are given as well as the reference test methods (when applicable) that will be used during the evaluation. The detailed report form and the letter of instructions are both made available on the data entry portal www.kpmd.co.uk/sgs-iis/. The participating laboratories are also requested to confirm the sample receipt on this data entry portal. The letter of instructions can also be downloaded from the iis website www.iisnl.com.

3 RESULTS

During five weeks after sample dispatch, the test results of the individual laboratories were gathered via the data entry portal www.kpmd.co.uk/sgs-iis/. The reported test results are tabulated per determination in appendix 1 of this report. The laboratories are presented by their code numbers.

Directly after the deadline, a reminder was sent to those laboratories that had not reported test results at that moment. Shortly after the deadline, the available test results were screened for suspect data. A test result was called suspect in case the Huber Elimination Rule (a robust outlier test) found it to be an outlier. The laboratories that produced these suspect data were asked to check the reported test results (no reanalyzes). Additional or corrected test results are used for data analysis and the original test results are placed under 'Remarks' in the result tables in appendix 1. Test results that came in after the deadline were not taken into account in this screening for suspect data and thus these participants were not requested for checks.

3.1 STATISTICS

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of June 2018 (iis-protocol, version 3.5).

For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded test results. Test results reported as '<... ' or '>... ' were not used in the statistical evaluation.

First, the normality of the distribution of the various data sets per determination was checked by means of the Lilliefors-test, a variant of the Kolmogorov-Smirnov test and by the calculation of skewness and kurtosis. Evaluation of the three normality indicators in combination with the visual evaluation of the graphic Kernel density plot, lead to judgement of the normality being either 'unknown', 'OK', 'suspect' or 'not OK'. After removal of outliers, this check was repeated. If a data set does not have a normal distribution, the (results of the) statistical evaluation should be used with due care.

The assigned value is determined by consensus based on the test results of the group of participants after rejection of the statistical outliers and/or suspect data.

According to ISO13528 all (original received or corrected) results per determination were submitted to outlier tests. In the iis procedure for proficiency tests, outliers are detected prior to calculation of the mean, standard deviation and reproducibility. For small data sets, Dixon (up to 20 test results) or Grubbs (up to 40 test results) outlier tests can be used. For larger data sets (above 20 test results) Rosner's outlier test can be used. Outliers are marked by $D(0.01)$ for the Dixon's test, by $G(0.01)$ or $DG(0.01)$ for the Grubbs' test and by $R(0.01)$ for the Rosner's test. Stragglers are marked by $D(0.05)$ for the Dixon's test, by $G(0.05)$ or $DG(0.05)$ for the Grubbs' test and by $R(0.05)$ for the Rosner's test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

For each assigned value the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. In this PT the criterion of ISO13528, paragraph 9.2.1, was met for all evaluated tests. Therefore, the uncertainty of all assigned values may be negligible and need not be included in the PT report.

Finally, the reproducibilities were calculated from the standard deviations by multiplying them with a factor of 2.8.

3.2 GRAPHICS

In order to visualize the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for one determination (see appendix 1). On the Y-axis the reported test results are plotted. The corresponding laboratory numbers are on the X-axis. The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected reference test method. Outliers and other data, which were excluded from the calculations, are represented as a cross. Accepted data are represented as a triangle.

Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms. Also, a normal Gauss curve (dotted line) was projected over the Kernel Density Graph (smooth line) for reference. The Gauss curve is calculated from the consensus value and the corresponding standard deviation.

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements (derived from e.g. ISO or ASTM test methods), the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation in this interlaboratory study.

The target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used, like Horwitz or an estimated reproducibility based on former iis proficiency tests.

When a laboratory did use a test method with a reproducibility that is significantly different from the reproducibility of the reference test method used in this report, it is strongly advised to recalculate the z-score, while using the reproducibility of the actual test method used, this in order to evaluate whether the reported test result is fit-for-use.

The z-scores were calculated according to:

$$z_{(\text{target})} = (\text{test result} - \text{average of PT}) / \text{target standard deviation}$$

The $z_{(\text{target})}$ scores are listed in the test result tables in appendix 1.

Absolute values for $z < 2$ are very common and absolute values for $z > 3$ are very rare. Therefore, the usual interpretation of z-scores is as follows:

$ z < 1$	good
$1 < z < 2$	satisfactory
$2 < z < 3$	questionable
$3 < z $	unsatisfactory

4 EVALUATION

In this proficiency test some problems were encountered with the dispatch of the samples. Therefore, the reporting time on the data entry portal was extended with another two weeks. For the regular Fuel Oil PT ten participants reported test results after the extended reporting date and eight other participants did not report any test results.

For the PT on Metals in Fuel Oil six participants reported test results after the extended reporting date and twenty-one other participants did not report any test results.

For the PT on Bromine and P-value in Fuel Oil four participants reported test results after the extended reporting date and thirteen other participants did not report any test results.

For the PT on Compatibility in Fuel Oil two participants reported test results after the extended reporting date and eleven other participants did not report any test results.

Not all participants were able to report all tests requested.

In total 149 participants reported 3055 numerical test results. Observed were 133 outlying test results, which is 4.4%. In proficiency tests outlier percentages of 3% - 7.5% are quite normal.

Not all data sets proved to have a normal Gaussian distribution. These are referred to as “not OK” or “suspect”. The statistical evaluation of these data sets should be used with due care, see also paragraph 3.1.

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section the reported test results are discussed per sample and per test. The test methods which were used by the various laboratories were taken into account for explaining the observed differences when possible and applicable. These test methods are also in the tables together with the original data in appendix 1. The abbreviations, used in these tables, are explained in appendix 3.

In the iis PT reports ASTM test methods are referred to with a number (e.g. D189) and an added designation for the year that the test method was adopted or revised (e.g. D189:06). When a method has been reapproved an “R” will be added and the year of approval (e.g. D189:06R19).

sample #23275

Total Acid Number: The group of participants had difficulty to meet the target requirements. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D664:18e2 procedure A or B at both end points. When evaluated separately for the type of end point used the calculated reproducibilities after rejection of the statistical outliers are still not in agreement with the corresponding requirements of ASTM D664:18e2 procedure A or B at both end points.

API Gravity: The group of participants may have had difficulty to meet the target requirements depending on the test method used. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D1298:12bR17e01 but not with ASTM D4052:22.

Ash Content: The group of participants had difficulty to meet the target requirements. Nine statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO6245:01 nor with ASTM D482:19.

Asphaltenes: The group of participants met the target requirements. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP143:04R21.

Calculated Carbon Aromaticity Index: The group of participants met the target requirements. Two statistical outliers were observed and two other test results were excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the requirements of ISO8217:17.

Carbon Residue micro method: The group of participants may have had difficulty to meet the target requirements depending on the test method used. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO10370:14 but not with ASTM D4530:15R20.

Conradson Carbon Residue: The group of participants met the target requirements. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D189:06R19.

Density at 15 °C: The group of participants met the target requirements. Nine statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO12185:96.

Flash Point PMcc: The group of participants met the target requirements. Eight statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO2719-B:16 and ASTM D93-B:20.

Heat of Combustion (Gross): The group of participants met the target requirements. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D240:19.

Heat of Combustion (Net): The group of participants met the target requirements. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D240:19

Hydrogen Sulfide: The reporting participants agreed on a value near or below the application range. Therefore, no z-scores are calculated.

Kinematic Viscosity at 50 °C: The group of participants met the target requirements. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO3104:23.

Kinematic Viscosity at 100 °C: The group of participants met the target requirements. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO3104:23.

Viscosity Stabinger at 50 °C: The group of participants met the target requirements. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D7042:21a.

Viscosity Stabinger at 100 °C: The group of participants met the target requirements. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D7042:21a.

Nitrogen: The group of participants met the target requirements. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D5762:18a.

Pour Point Lower: The group of participants met the target requirements. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ISO3016:19.

Pour Point Upper: The group of participants met the target requirements. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ISO3016:19.

Pour Point Automated: The group of participants had difficulty to meet the target requirements. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D5950:14R20.

Sediment by Extraction: The group of participants met the target requirements. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D473:22.

Total Sediment Existent (TSE): The group of participants met the target requirements. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM IP375:11R22.

Total Sediment Accelerated (TSA): The group of participants met the target requirements. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP390:11R17.

Total Sediment Potential (TSP): The group of participants met the target requirements. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of IP390:11R17.

Total Sulfur: The group of participants may have had difficulty to meet the target requirements depending on the test method used. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO8754:03 but not with ASTM D4294:21.

Water by distillation: The group of participants met the target requirements. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ISO3733:99 and ASTM D95:23.

Water and Sediment: The group of participants met the target requirements. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D1796:22.

Vacuum Distillation at 10 mmHg but reported as AET: The group of participants met the target requirements. In total sixteen statistical outliers were observed over eight distillation parameters and eight other test results were excluded. All calculated reproducibilities after rejection of the suspect data are in agreement with the requirements of ASTM D1160:18.

CHN Analysis: The group of participants may have had difficulty to meet the target requirements depending on the type of analysis. In total four statistical outliers were observed. The calculated reproducibilities for Carbon and Hydrogen after rejection of the statistical outliers are in agreement with the requirements of ASTM D5291-ABC:21. The calculated reproducibility for Nitrogen after rejection of the statistical outliers is not in agreement with the requirements of ASTM D5291-D:21.

sample #23276

Aluminum: The group of participants met the target requirements. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 and IP501:05R19.

Silicon: The group of participants may have had difficulty to meet the target requirements depending on the test method used. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 but not with IP501:05R19.

Sum Aluminum and Silicon: The group of participants may have had difficulty to meet the target requirements depending on the test method used. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 but not with IP501:05R19.

Iron: The group of participants may have had difficulty to meet the target requirements depending on the test method used. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of IP470:05 but not with IP501:05R19.

- Nickel: The group of participants met the target requirements. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 and IP501:05R19.
- Sodium: The group of participants met the target requirements. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 and IP501:05R19.
- Vanadium: The group of participants met the target requirements. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 and IP501:05R19.
- Calcium: The group of participants met the target requirements. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 and IP501:05R19.
- Phosphorus: The group of participants met the target requirements. Five statistical outliers were observed and one other test result was excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the requirements of IP470:05 and IP501:05R19.
- Zinc: The group of participants had difficulty to meet the target requirements. One statistical outlier was observed and one other test result was excluded. The calculated reproducibility after rejection of the suspect data is not in agreement with the requirements of IP470:05 nor with IP501:05R19.

Finally, it should be noted that proper attention for homogenization is crucial for a material such as Fuel Oil. It is very susceptible to problems when not handled correctly due to the nature of the material. Practically every test method for the determination of metals in Fuel Oil has similar statements regarding homogenization. It is recommended to use a quality control fuel oil with known amounts of metals like Al, Fe, Si and V. This control standard may be of use to detect deviations in metals with respect to the preparation steps.

sample #23277

- Bromine Number: The group of participants met the target requirements. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D1159:23.
- P-value SMS1600: The group of participants had difficulty to meet the target requirements. No statistical outliers were observed. The calculated reproducibility is not in agreement with the requirements of SMS1600.

P-ratio, FR_{max} and Po D7060: Only a few participants reported test results. Therefore, no z-scores are calculated.

P-value, Pa, Po, SE and FR_{5/1} D7112: Only one participant reported test results.

Separability Number D7061: Only a few participants reported test results. Therefore, no z-scores are calculated.

Toluene dilution ratio D7061: Only a few participants reported test results. Therefore, no z-scores are calculated.

sample #23278

Compatibility rating: The group of participants had difficulty to meet the target requirements. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D4740-M:20.

When evaluated separately for type of reference for spot determination the calculated reproducibility after rejection of the statistical outliers is still not in agreement with the requirements of ASTM D4740-M:20.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the reference test method and the reproducibility as found for the group of participating laboratories. The number of significant test results, the average, the calculated reproducibility (2.8 * standard deviation) and the target reproducibility derived from reference methods are presented in the next tables.

Parameter	unit	n	average	2.8 * sd	R(lit)
Total Acid Number	mg KOH/g	70	0.10	0.09	0.06
API Gravity		75	8.8	0.2	0.5
Ash Content	%M/M	89	0.030	0.009	0.005
Asphaltenes	%M/M	58	8.08	1.01	1.62
Calc. Carbon Aromaticity Index		63	862.9	1.3	2.2
Carbon Residue micro method	%M/M	83	15.72	1.18	1.54
Conradson Carbon Residue	%M/M	40	15.88	1.58	2.50
Density at 15 °C	kg/m ³	110	1008.1	1.2	1.5
Flash Point PMcc	°C	111	99.9	5.0	6
Heat of Combustion (Gross)	MJ/kg	65	41.91	0.39	0.40
Heat of Combustion (Net)	MJ/kg	58	39.69	0.42	0.40
Hydrogen Sulfide	mg/kg	33	<0.60	n.e.	n.e.
Kinematic Viscosity at 50 °C	mm ² /s	98	716.8	33.1	60.7
Kinematic Viscosity at 100 °C	mm ² /s	78	48.52	2.68	5.85
Kin. Viscosity Stabinger at 50 °C	mm ² /s	33	718.6	35.3	73.9
Kin. Viscosity Stabinger at 100 °C	mm ² /s	33	48.31	2.40	3.47
Nitrogen	mg/kg	41	3812	977	1014

Parameter	unit	n	average	2.8 * sd	R(lit)
Pour Point Lower	°C	54	6.0	9.6	9
Pour Point Upper	°C	79	8.2	8.2	9
Pour Point Automated 3 °C int.	°C	27	2.3	8.6	6.1
Sediment by Extraction	%M/M	65	0.017	0.016	0.037
Total Sediment Existent (TSE)	%M/M	67	0.017	0.017	0.038
Total Sediment Accel. (TSA)	%M/M	58	0.018	0.017	0.039
Total Sediment Potential (TSP)	%M/M	64	0.018	0.017	0.039
Total Sulfur	%M/M	115	3.38	0.24	0.29
Water by distillation	%V/V	90	0.05	0.07	0.2
Water and Sediment	%V/V	44	0.05	0.07	0.11
Initial Boiling Point	°C	29	195.9	23.4	49
5% recovered	°C	29	280.3	18.8	26.7
10% recovered	°C	29	328.0	13.5	21.6
20% recovered	°C	27	398.3	10.2	19.8
30% recovered	°C	27	454.6	9.6	17.7
40% recovered	°C	28	494.6	10.5	15.5
50% recovered	°C	19	524.5	11.3	14.5
Final Boiling Point	°C	26	527.2	22.0	27
Total Carbon	%M/M	25	85.5	1.6	2.4
Total Hydrogen	%M/M	25	10.2	0.4	0.7
Total Nitrogen	%M/M	18	0.45	0.13	0.10

Table 10: reproducibilities of tests on sample #23275

Element	unit	n	average	2.8 * sd	R(lit)
Aluminum as Al	mg/kg	76	14.9	5.2	4.8
Silicon as Si	mg/kg	76	15.4	5.9	8.7
Sum Aluminum and Silicon	mg/kg	71	30.3	9.7	9.9
Iron as Fe	mg/kg	75	22.0	5.9	12.1
Nickel as Ni	mg/kg	75	18.1	5.1	11.5
Sodium as Na	mg/kg	73	11.0	3.8	5.5
Vanadium as V	mg/kg	76	40.1	5.8	20.6
Calcium as Ca	mg/kg	71	8.3	2.4	4.5
Phosphorus as P	mg/kg	59	2.2	0.9	2.0
Zinc as Zn	mg/kg	74	1.9	1.1	0.9

Table 11: reproducibilities of tests on sample #23276

Parameter	unit	n	average	2.8 * sd	R(lit)
Bromine Number	g Br ₂ /100 g	34	10.6	3.3	3.8
P-value SMS1600		30	1.48	0.28	0.21
P-ratio D7060		5	n.e.	n.e.	n.e.
FR _{max} D7060		5	n.e.	n.e.	n.e.

Parameter	unit	n	average	2.8 * sd	R(lit)
Po D7060		4	n.e.	n.e.	n.e.
P-value D7112		0	n.e.	n.e.	n.e.
Pa D7112		1	n.e.	n.e.	n.e.
Po D7112		1	n.e.	n.e.	n.e.
SE D7112	%	0	n.e.	n.e.	n.e.
FR _{5/1} D7112		0	n.e.	n.e.	n.e.
Separability Number D7061	%T	3	n.e.	n.a.	n.a.
Toluene dilution ratio D7061		2	n.e.	n.a.	n.a.
Compatibility rating		46	4.4	1.9	1

Table 12: reproducibilities of tests on sample #23277 and sample #23278

Without further statistical calculations it can be concluded that for many tests there is a good compliance of the group of participants with the reference test methods. The problematic tests have been discussed in paragraph 4.1.

4.3 COMPARISON OF THE PROFICIENCY TEST OF DECEMBER 2023 WITH PREVIOUS PTS

	December 2023	December 2022	June 2022	December 2021	June 2021
Number of reporting laboratories	149	152	147	139	159
Number of test results	3055	3163	2488	3146	2744
Number of statistical outliers	133	85	85	63	108
Percentage of statistical outliers	4.4%	2.7%	3.4%	2.0%	3.9%

Table 13: comparison with previous proficiency tests

In proficiency tests outlier percentages of 3% - 7.5% are quite normal.

The performance of the determinations of the proficiency tests was compared to the requirements of the reference test methods. The conclusions are given in the following table.

Parameter	December 2023	December 2022	June 2022	December 2021	June 2021
Total Acid Number	-	(--)	(--)	(--)	(--)
API Gravity	++	++	++	++	++
Ash Content	-	--	--	-	-
Asphaltenes	+	--	+	+/-	-
Calc. Carbon Aromaticity Index	+	+/-	+	+	+
Carbon Residue micro method	+	+/-	+	+	+
Conradson Carbon Residue	+	-	+	+	+
Density at 15 °C	+	+/-	+/-	+	-
Flash Point PMcc	+	+/-	+/-	+	+/-
Heat of Combustion (Gross)	+/-	+	+	+/-	+/-
Heat of Combustion (Net)	+/-	+	+	+/-	+/-

Parameter	December 2023	December 2022	June 2022	December 2021	June 2021
Hydrogen Sulfide	n.e.	n.e.	n.a.	n.a.	n.a.
Kinematic Viscosity at 50 °C	+	+/-	+	+	++
Kinematic Viscosity at 100 °C	++	++	++	++	++
Kin. Viscosity Stabinger at 50 °C	++	+	++	++	++
Kin. Viscosity Stabinger at 100 °C	+	++	++	+	++
Nitrogen	+	+/-	-	-	-
Pour Point Lower	+/-	+	+/-	+	-
Pour Point Upper	+/-	+	-	+	+
Pour Point Automated 3 °C int.	-	+/-	-	+/-	+/-
Sediment by Extraction	++	++	+	+	++
Total Sediment Existent (TSE)	++	++	++	++	++
Total Sediment Accel. (TSA)	++	++	++	+	++
Total Sediment Potential (TSP)	++	++	++	+	++
Total Sulfur	+	+	+	+	+
Water by distillation	++	++	++	++	++
Water and Sediment	+	+	+	++	+
Distillation at 10 mmHg to AET	+	-	+	+	+
Total Carbon	+	+	+	++	++
Total Hydrogen	+	+	+	+	+
Total Nitrogen	-	-	-	-	-
Aluminum as Al	+/-	+/-	-	+	-
Silicon as Si	+	+	+/-	+	+
Sum Aluminum and Silicon	+/-	+	-	+/-	-
Iron as Fe	++	++	+	+	+
Nickel as Ni	++	++	+	+	+/-
Sodium as Na	+	+	+	+	+
Vanadium as V	++	++	++	++	+
Calcium as Ca	+	+	+	++	+/-
Phosphorus as P	++	+	+/-	n.e.	n.e.
Zinc as Zn	-	+/-	-	n.e.	(-)
Bromine Number	+	+	n.a.	+/-	n.a.
P-value SMS1600	-	-	n.a.	-	n.a.
P-ratio D7060	n.a.	n.a.	n.a.	n.a.	n.a.
FR _{max} D7060	(--)	(--)	n.a.	n.a.	n.a.
Po D7060	(--)	(--)	n.a.	n.a.	n.a.
P-value D7112	n.e.	n.e.	n.a.	n.a.	n.a.
Pa D7112	n.e.	n.e.	n.a.	n.a.	n.a.
Po D7112	n.e.	n.e.	n.a.	n.a.	n.a.
SE D7112	n.e.	n.e.	n.a.	n.a.	n.a.
FR _{5/1} D7112	n.e.	n.e.	n.a.	n.a.	n.a.
Separability Number D7061	n.e.	n.e.	n.a.	n.a.	n.a.

Parameter	December 2023	December 2022	June 2022	December 2021	June 2021
Toluene dilution ratio D7061	n.a.	n.a.	n.a.	n.a.	n.a.
Compatibility rating	-	-	n.a.	+/-	n.a.

Table 14: comparison of determinations to the reference test methods

For results between brackets no z-scores are calculated.

The following performance categories were used:

- ++ : group performed much better than the reference test method
- + : group performed better than the reference test method
- +/- : group performance equals the reference test method
- : group performed worse than the reference test method
- : group performed much worse than the reference test method
- n.e. : not evaluated

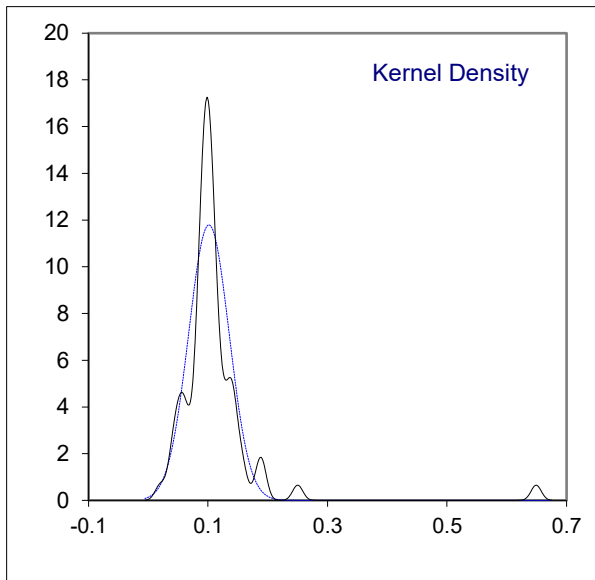
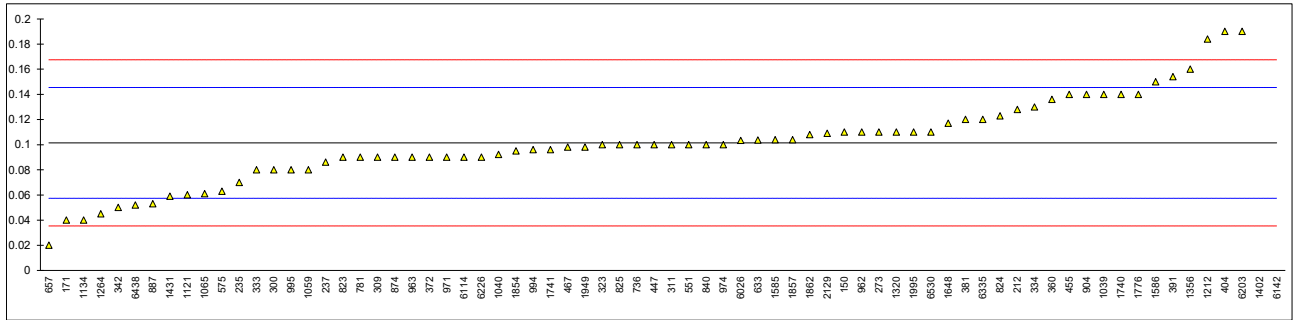
APPENDIX 1

Determination of Total Acid Number on sample #23275; results in mg KOH/g							
lab	method	value	mark	z(targ)	End point determination	Volume solvent	remarks
52	D664-A	<0.10		----	---	---	
120		----		----	---	---	
150	D664-A	0.11		0.39	Inflection Point	60 mL	
154		----		----	---	---	
159		----		----	---	---	
169		----		----	---	---	
171	D664-A	0.04		-2.79	---	---	
212	D664-A	0.128		1.21	Inflection Point	125 mL	
223		----		----	---	---	
225		----		----	---	---	
228		----		----	---	---	
231		----		----	---	---	
235	D664-A	0.07		-1.43	Buffer End Point pH 10	60 mL	
237	D664-A	0.086		-0.70	Inflection Point	125 mL	
238		----		----	---	---	
253		----		----	---	---	
256		----		----	---	---	
273	D664-A	0.11	C	0.39	Inflection Point	125 mL	fr.0.25
300	D664-A	0.08		-0.97	Inflection Point	60 mL	
309	D664-A	0.09		-0.52	Buffer End Point pH 10	125 mL	
311	D664-A	0.10		-0.06	---	---	
313		----		----	---	---	
323	D664-A	0.10		-0.06	Inflection Point	125 mL	
328		----		----	---	---	
333	D664-A	0.08		-0.97	Inflection Point	125 mL	
334	D664-A	0.13		1.30	Inflection Point	60 mL	
339		----		----	---	---	
342	D664-A	0.05		-2.34	Buffer End Point pH 10	125 mL	
349		----		----	---	---	
352		----		----	---	---	
360	D664-A	0.136		1.57	Inflection Point	60 mL	
372	D664-A	0.09		-0.52	Inflection Point	60 mL	
381	D664-A	0.12		0.85	---	125 mL	
391	D664-A	0.154		2.39	---	---	
404	D664-A	0.19		4.03	Inflection Point	---	
445	D664-A	<0.1		----	Inflection Point	60 mL	
447	D664-A	0.1		-0.06	---	---	
455	IP177	0.14		1.75	---	---	
467	D664-A	0.098		-0.15	Buffer End Point pH 11	125 mL	
507		----		----	---	---	
541		----		----	---	---	
551	D664-A	0.10		-0.06	Inflection Point	125 mL	
575	D664-B	0.063		-1.75	Buffer End Point pH 10	60 mL	
621	D664-A	<0.10		----	Inflection Point	60 mL	
633	D664-A	0.1037		0.10	Inflection Point	125 mL	
634		----		----	---	---	
657	D664-A	0.02		-3.70	Inflection Point	125 mL	
710		----		----	---	---	
736	D664-A	0.10		-0.06	Inflection Point	125 mL	
752		----		----	---	---	
753		----		----	---	---	
778		----		----	---	---	
781	D664-A	0.09		-0.52	Inflection Point	125 mL	
785		----		----	---	---	
798		----		----	---	---	
823	D664-A	0.09		-0.52	Inflection Point	125 mL	
824	D664-A	0.1229		0.98	Inflection Point	125 mL	
825	D664-A	0.1		-0.06	Buffer End Point pH 10	125 mL	
840	D664-A	0.10		-0.06	Inflection Point	60 mL	
872		----		----	---	---	
873	D664-A	<0.10		----	Buffer End Point pH 10	125 mL	
874	D664-A	0.09		-0.52	---	---	
875	D664-A	< 0.1		----	---	---	
887	D664-A	0.053		-2.20	Buffer End Point pH 11	125 mL	
904	D664-A	0.14		1.75	Inflection Point	125 mL	
962	D664-A	0.11		0.39	Inflection Point	60 mL	
963	D664-A	0.09		-0.52	Inflection Point	60 mL	
971	D664-A	0.09		-0.52	---	---	
974	D664-A	0.1		-0.06	Inflection Point	125 mL	
994	D664-A	0.096		-0.25	Inflection Point	60 mL	
995	D664-A	0.08		-0.97	Inflection Point	125 mL	
996		----		----	---	---	
997		----		----	---	---	

Determination of Total Acid Number on sample #23275; results in mg KOH/g							
lab	method	value	mark	z(targ)	End point determination	Volume solvent	remarks
1011		----		----	---	---	
1039	D664-A	0.14		1.75	Inflection Point	125 mL	
1040	D664-A	0.0922		-0.42	Inflection Point	60 mL	
1059	ISO6619	0.08		-0.97	---	---	
1065	D664-A	0.061		-1.84	---	---	
1082		----		----	---	---	
1108		----		----	---	---	
1121	D664-A	0.0602		-1.87	Buffer End Point pH 10	125 mL	
1126		----		----	---	---	
1134	IP177	0.04		-2.79	Inflection Point	125 mL	
1191		----		----	---	---	
1205		----		----	---	---	
1212	D664-A	0.184		3.75	Buffer End Point pH 10	125 mL	
1218		----		----	---	---	
1259		----		----	---	---	
1264	D664-A	0.045		-2.56	Inflection Point	60 mL	
1297		----		----	---	---	
1299		----		----	---	---	
1320	D664-A	0.11		0.39	Inflection Point	125 mL	
1353		----		----	---	---	
1356	D664-A	0.16		2.66	Inflection Point	60 mL	
1381		----		----	---	---	
1402	IP177	0.25	R(0.01)	6.76	Buffer End Point pH 11	60 mL	
1431	D664-A	0.059		-1.93	Inflection Point	60 mL	
1438		----		----	---	---	
1443		----		----	---	---	
1585	D664-A	0.104		0.12	Inflection Point	125 mL	
1586	D664-A	0.15		2.21	Inflection Point	125 mL	
1636		----		----	---	---	
1648	D664-A	0.117		0.71	Inflection Point	60 mL	
1665		----		----	---	---	
1681		----		----	---	---	
1720		----		----	---	---	
1730		----		----	---	---	
1740	D974	0.14		1.75	Inflection Point	60 mL	
1741	ISO6619	0.096		-0.25	Inflection Point	---	
1776	D8045	0.14		1.75	---	---	
1810		----		----	---	---	
1811		----		----	---	---	
1854	D664-A	0.095		-0.29	Inflection Point	125 mL	
1857	D664-A	0.104		0.12	Inflection Point	125 mL	
1862	D664-A	0.108		0.30	Buffer End Point pH 10	125 mL	
1906		----		----	---	---	
1942		----		----	---	---	
1949	D664-A	0.098		-0.15	Inflection Point	125 mL	
1995	D664-A	0.11		0.39	Inflection Point	125 mL	
2129	D664-A	0.109		0.35	Inflection Point	125 mL	
2146		----		----	---	---	
6026	D664-A	0.1034		0.09	Inflection Point	125 mL	
6075		----		----	---	---	
6092		----		----	---	---	
6112		----		----	---	---	
6114	D664-A	0.09		-0.52	Inflection Point	60 mL	
6142	D664-A	0.649	R(0.01)	24.89	Inflection Point	125 mL	
6143		----		----	---	---	
6203	D664-A	0.19		4.03	Inflection Point	125 mL	
6226	D664-A	0.09		-0.52	Inflection Point	125 mL	
6238		----		----	---	---	
6266		----		----	---	---	
6319		----		----	---	---	
6335	D664-A	0.12		0.85	Buffer End Point pH 11	125 mL	
6364		----		----	---	---	
6373		----		----	---	---	
6404		----		----	---	---	
6406		----		----	---	---	
6438	D664-A	0.052		-2.25	Inflection Point	60 mL	
6447		----		----	---	---	
6505		----		----	---	---	
6530	D664-A	0.11		0.39	Inflection Point	125 mL	
6563		----		----	---	---	

Determination of Total Acid Number on sample #23275; results in mg KOH/g

	OK	IP only suspect	BEP only not OK
normality	OK		
n	70	48	11
outliers	2	1	1
mean (n)	0.1014	0.1039	0.0906
st.dev. (n)	0.03385	0.03263	0.03900
R(calc.)	0.0948	0.0914	0.1092
st.dev.(D664-A:18e2 IP 60mL)	0.02200	0.02244	----
R(D664-A:18e2 IP 60 mL)	0.0616	0.0628	----
compare			
R(D664-A:18e2 IP 125 mL)	0.0201	0.0206	----
R(D664-A:18e2 BEP 60 mL)	0.0594	----	0.0532
R(D664-A:18e2 BEP 125 mL)	0.0285	----	0.0253

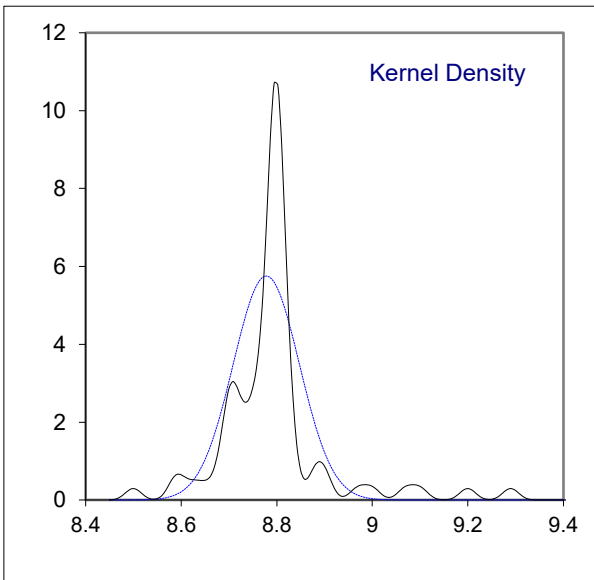
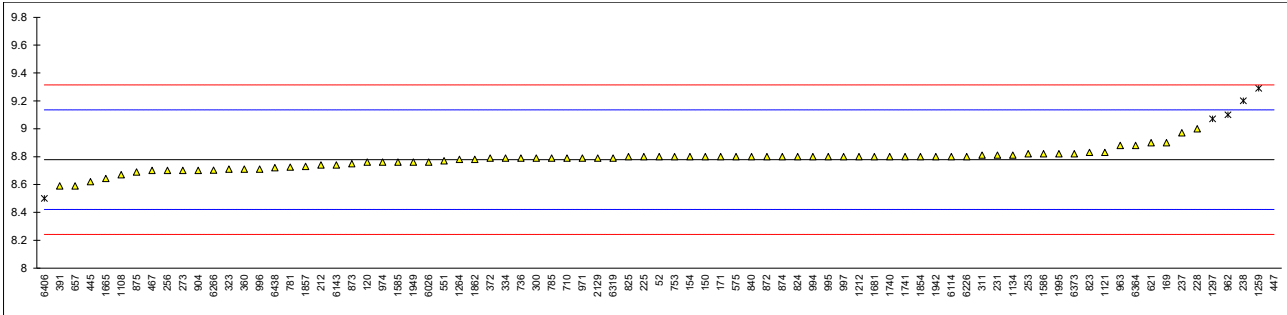


Determination of API Gravity on sample #23275					
lab	method	value	mark	z(targ)	remarks
52	D4052	8.8		0.12	
120	D4052	8.76		-0.10	
150	D287	8.8		0.12	
154	D4052	8.8		0.12	
159		----		----	
169	D4052	8.9		0.68	
171	D4052	8.8		0.12	
212	ISO12185	8.74		-0.22	
223		----		----	
225	D4052	8.8		0.12	
228	D1298	9		1.24	
231	D4052	8.81		0.18	
235		----		----	
237	D4052	8.97		1.07	
238	D1298	9.2	C,R(0.01)	2.36	first reported 9.8
253	D4052	8.82		0.23	
256	D1298	8.7		-0.44	
273	D4052	8.7	C	-0.44	first reported 8.1
300	D1298	8.79		0.06	
309		----		----	
311	D4052	8.81		0.18	
313		----		----	
323	D1298	8.71		-0.38	
328		----		----	
333		----		----	
334	D1250	8.79		0.06	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	D4052	8.71		-0.38	
372	D1298	8.79		0.06	
381		----		----	
391	D1298	8.59		-1.06	
404		----		----	
445	D4052	8.62		-0.89	
447	D1250	10.4	R(0.01)	9.08	
455		----		----	
467	D4052	8.7		-0.44	
507		----		----	
541		----		----	
551	D4052	8.77		-0.05	
575	D1298	8.8	C	0.12	first reported 12.8
621	D4052	8.9		0.68	
633		----		----	
634		----		----	
657	ISO12185	8.59		-1.06	
710	ISO12185	8.79		0.06	
736	D1298	8.79		0.06	
752		----		----	
753	D1298	8.8		0.12	
778		----		----	
781	ISO12185	8.725		-0.30	
785	D1298	8.79		0.06	
798		----		----	
823	D4052	8.83		0.29	
824	ISO12185	8.8	C	0.12	first reported 1007.7
825	ISO12185	8.8		0.12	
840	ISO12185	8.80		0.12	
872	D1298	8.8		0.12	
873	ISO12185	8.75		-0.16	
874	D1298	8.8		0.12	
875	D1298	8.69		-0.50	
887		----		----	
904	ISO12185	8.7		-0.44	
962	D4052	9.1	R(0.01)	1.80	
963	D1298	8.88		0.57	
971	D1298	8.79		0.06	
974	D1298	8.76		-0.10	
994	D1250	8.8		0.12	
995	D1250	8.8		0.12	
996	D1298	8.71		-0.38	
997	D1298	8.8		0.12	
1011		----		----	
1039		----		----	
1040		----		----	

Determination of API Gravity on sample #23275					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108	ISO12185	8.67		-0.61	
1121	D4052	8.83		0.29	
1126		----		----	
1134	D4052	8.81		0.18	
1191		----		----	
1205		----		----	
1212	D287	8.8		0.12	
1218		----		----	
1259	ISO12185	9.29	R(0.01)	2.86	
1264	D4052	8.78		0.01	
1297	D4052	9.07	R(0.01)	1.63	
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381		----		----	
1402		----		----	
1431		----		----	
1438		----		----	
1443		----		----	
1585	ISO12185	8.76		-0.10	
1586	D1298	8.82		0.23	
1636		----		----	
1648		----		----	
1665	D1298	8.643		-0.76	
1681	D4052	8.8	C	0.12	first reported 12.18
1720		----		----	
1730		----		----	
1740	D1298	8.80		0.12	
1741	D1298	8.8		0.12	
1776		----		----	
1810		----		----	
1811		----		----	
1854	D4052	8.8		0.12	
1857	D1250	8.73		-0.27	
1862	D1250	8.78		0.01	
1906		----		----	
1942	D1298	8.8		0.12	
1949	D1298	8.76		-0.10	
1995	D4052	8.82		0.23	
2129	D1298	8.79		0.06	
2146		----		----	
6026	D1298	8.76		-0.10	
6075		----		----	
6092		----		----	
6112		----		----	
6114	D1298	8.8		0.12	
6142		----		----	
6143	D1298	8.74		-0.22	
6203		----		----	
6226	D4052	8.80		0.12	
6238		----		----	
6266	D4052	8.703		-0.42	
6319	D1250	8.79		0.06	
6335		----		----	
6364	D1298	8.88		0.57	
6373	ISO12185	8.82		0.23	
6404		----		----	
6406	D4052	8.50	R(0.01)	-1.56	
6438	D4052	8.72		-0.33	
6447		----		----	
6505		----		----	
6530		----		----	
6563		----		----	

Determination of API Gravity on sample #23275

normality	not OK
n	75
outliers	6
mean (n)	8.778
st.dev. (n)	0.0693
R(calc.)	0.194
st.dev.(D1298:12bR17e1)	0.1786
R(D1298:12bR17e1)	0.5
compare	
R(D4052:22)	0.128

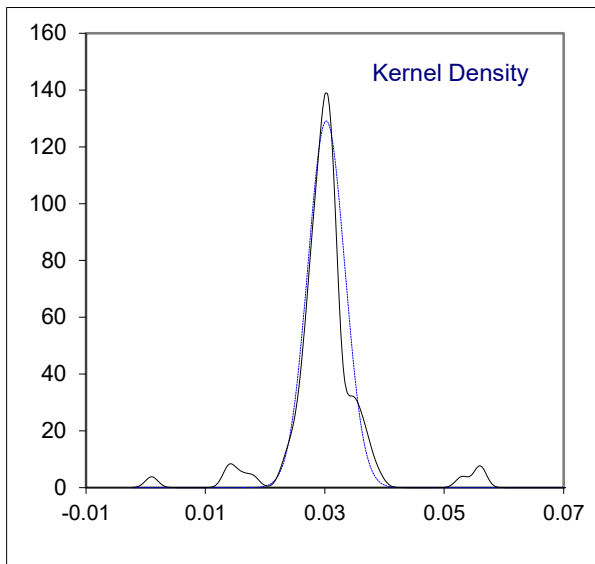
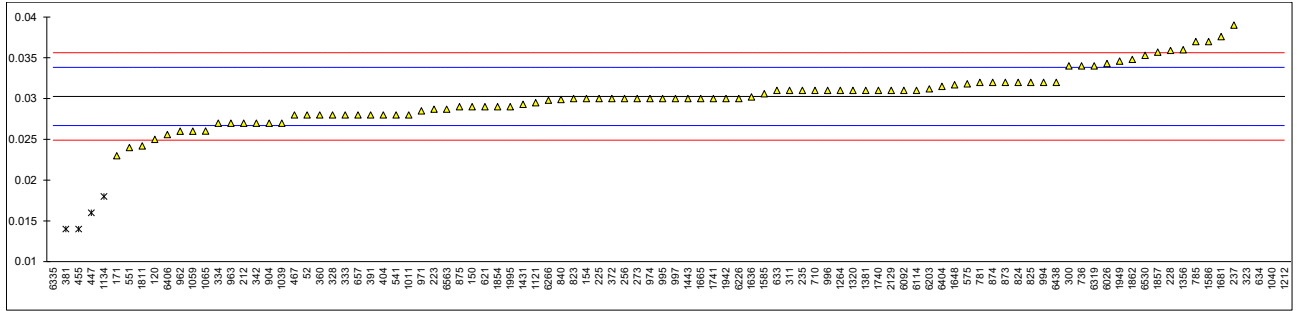


Determination of Ash Content on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
52	D482	0.028		-1.27	
120	D482	0.025		-2.95	
150	D482	0.029		-0.71	
154	D482	0.030		-0.15	
159		----		----	
169		----		----	
171	ISO6245	0.023		-4.07	
212	ISO6245	0.027		-1.83	
223	D482	0.0287		-0.88	
225	D482	0.03		-0.15	
228	D482	0.0359		3.16	
231		----		----	
235	ISO6245	0.031		0.41	
237	D482	0.039		4.89	
238		----		----	
253		----		----	
256	D482	0.03		-0.15	
273	D482	0.030	C	-0.15	first reported 0.013
300	ISO6245	0.034		2.09	
309		----		----	
311	ISO6245	0.031		0.41	
313		----		----	
323	ISO6245	0.053	R(0.01)	12.73	
328	ISO6245	0.028		-1.27	
333	ISO6245	0.028		-1.27	
334	ISO6245	0.027		-1.83	
339		----		----	
342	D482	0.027		-1.83	
349		----		----	
352		----		----	
360	ISO6245	0.028		-1.27	
372	D482	0.030		-0.15	
381	ISO6245	0.014	C,R(0.01)	-9.11	first reported 0.055
391	ISO6245	0.028		-1.27	
404	ISO6245	0.028		-1.27	
445		----		----	
447	IP4	0.016	R(0.01)	-7.99	
455	IP4	0.014	R(0.01)	-9.11	
467	ISO6245	0.028		-1.27	
507		----		----	
541	D482	0.028		-1.27	
551	D482	0.024		-3.51	
575	D482	0.0318	C	0.86	first reported 0.167
621	D482	0.029		-0.71	
633	D482	0.031		0.41	
634	ISO6245	0.056	R(0.01)	14.41	
657	D482	0.028		-1.27	
710	D482	0.031		0.41	
736	ISO6245	0.034		2.09	
752		----		----	
753		----		----	
778		----		----	
781	ISO6245	0.032		0.97	
785	ISO6245	0.037		3.77	
798		----		----	
823	ISO6245	0.030		-0.15	
824	ISO6245	0.032	C	0.97	first reported 8.83
825	D482	0.032		0.97	
840	ISO6245	0.0299		-0.20	
872		----		----	
873	D482	0.032		0.97	
874	D482	0.032		0.97	
875	ISO6245	0.029		-0.71	
887		----		----	
904	ISO6245	0.027		-1.83	
962	D482	0.026		-2.39	
963	ISO6245	0.027		-1.83	
971	ISO6245	0.0285		-0.99	
974	D482	0.030		-0.15	
994	D482	0.032		0.97	
995	ISO6245	0.030		-0.15	
996	D482	0.031		0.41	
997	ISO6245	0.030		-0.15	
1011	ISO6245	0.028		-1.27	
1039	ISO6245	0.027		-1.83	
1040	ISO6245	0.056	R(0.01)	14.41	

Determination of Ash Content on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
1059	ISO6245	0.026		-2.39	
1065	D482	0.026024		-2.37	
1082		----		----	
1108		----		----	
1121	ISO6245	0.0295		-0.43	
1126		----		----	
1134	IP4	0.018	C,R(0.05)	-6.87	first reported 0.02
1191		----		----	
1205		----		----	
1212	ISO6245	0.0975	R(0.01)	37.65	
1218		----		----	
1259		----		----	
1264	D482	0.031		0.41	
1297		----		----	
1299		----		----	
1320	ISO6245	0.031		0.41	
1353		----		----	
1356	ISO6245	0.036		3.21	
1381	ISO6245	0.031		0.41	
1402		----		----	
1431	D482	0.0293	C	-0.54	first reported 0.0393
1438		----		----	
1443	ISO6245	0.030		-0.15	
1585	ISO6245	0.0306		0.19	
1586	ISO6245	0.037	C	3.77	first reported 0.017
1636	D482	0.0302		-0.04	
1648	ISO6245	0.0317		0.80	
1665	D482	0.03		-0.15	
1681	ISO6245	0.0376		4.11	
1720		----		----	
1730		----		----	
1740	D482	0.031		0.41	
1741	ISO6245	0.03		-0.15	
1776		----		----	
1810		----		----	
1811	ISO6245	0.0242		-3.40	
1854	ISO6245	0.029		-0.71	
1857	ISO6245	0.0357		3.04	
1862	D482	0.0348		2.54	
1906		----		----	
1942	D482	0.030		-0.15	
1949	ISO6245	0.0346		2.43	
1995	D482	0.029		-0.71	
2129	ISO6245	0.031		0.41	
2146		----		----	
6026	ISO6245	0.0343		2.26	
6075		----		----	
6092	ISO6245	0.031	C	0.41	first reported 0.013
6112		----		----	
6114	ISO6245	0.031		0.41	
6142		----		----	
6143		----		----	
6203	ISO6245	0.0312		0.52	
6226	ISO6245	0.030		-0.15	
6238		----		----	
6266	D482	0.0298		-0.26	
6319	D482	0.034		2.09	
6335	D482	0.001	R(0.01)	-16.39	
6364		----		----	
6373		----		----	
6404	ISO6245	0.0315	C	0.69	first reported 0.1566
6406	ISO6245	0.0256		-2.61	
6438	D482	0.032		0.97	
6447		----		----	
6505		----		----	
6530	D482	0.0353		2.82	
6563	D482	0.0287		-0.88	

Determination of Ash Content on sample #23275; results in %M/M

normality	OK
n	89
outliers	9
mean (n)	0.0303
st.dev. (n)	0.00309
R(calc.)	0.0086
st.dev.(ISO6245:01)	0.00179
R(ISO6245:01)	0.005
compare	
R(D482:19)	0.005

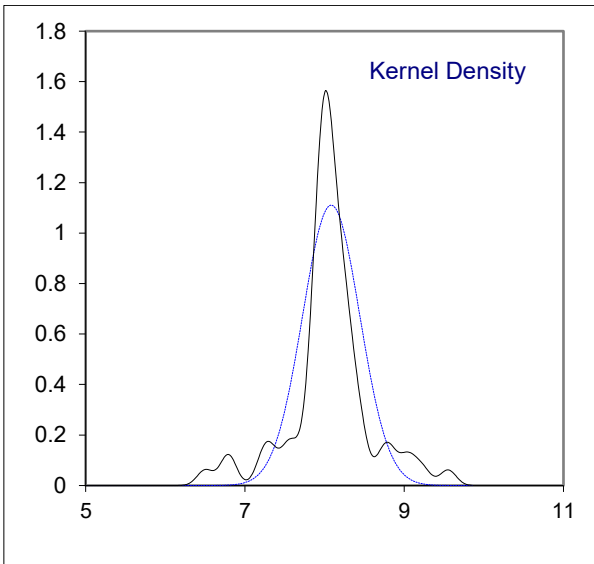
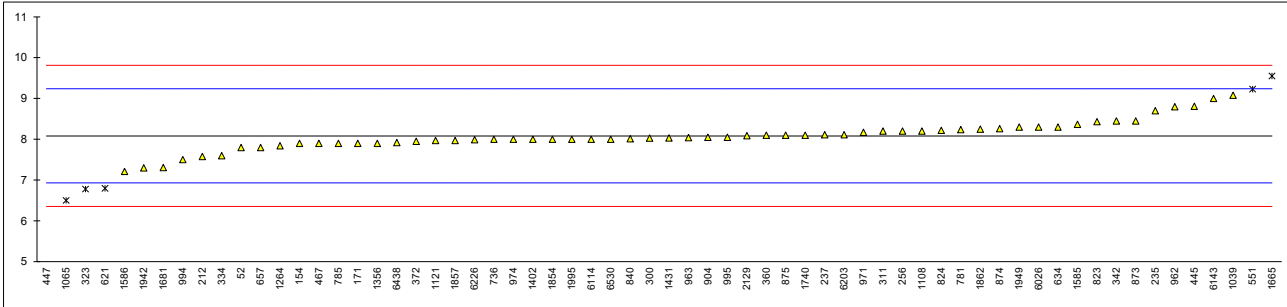


Determination of Asphaltenes on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
52	IP143	7.8		-0.49	
120		----		----	
150		----		----	
154	D6560	7.9		-0.32	
159		----		----	
169		----		----	
171	IP143	7.9		-0.32	
212	IP143	7.578		-0.87	
223		----		----	
225		----		----	
228		----		----	
231		----		----	
235	IP143	8.70	C	1.07	first reported 5.26
237	D6560	8.11		0.05	
238		----		----	
253		----		----	
256	IP143	8.2		0.20	
273		----		----	
300	IP143	8.03		-0.09	
309		----		----	
311	IP143	8.2		0.20	
313		----		----	
323	IP143	6.78	R(0.05)	-2.26	
328		----		----	
333		----		----	
334	IP143	7.6		-0.84	
339		----		----	
342	IP143	8.450		0.64	
349		----		----	
352		----		----	
360	D6560	8.10		0.03	
372	IP143	7.95		-0.23	
381		----		----	
391		----		----	
404		----		----	
445	IP143	8.81		1.26	
447	IP143	2.7	R(0.01)	-9.32	
455		----		----	
467	IP143	7.9		-0.32	
507		----		----	
541		----		----	
551	IP143	9.232	R(0.05)	1.99	
575		----		----	
621	IP143	6.8	R(0.05)	-2.22	
633		----		----	
634	IP143	8.3016		0.38	
657	IP143	7.8		-0.49	
710		----		----	
736	IP143	8.00		-0.14	
752		----		----	
753		----		----	
778		----		----	
781	IP143	8.24		0.27	
785	IP143	7.9		-0.32	
798		----		----	
823	IP143	8.43		0.60	
824	IP143	8.22		0.24	
825		----		----	
840	D6560	8.016		-0.12	
872		----		----	
873	IP143	8.45		0.64	
874	D6560	8.26		0.31	
875	IP143	8.1		0.03	
887		----		----	
904	IP143	8.05		-0.06	
962	D6560	8.8		1.24	
963	IP143	8.04		-0.07	
971	IP143	8.17		0.15	
974	IP143	8.0		-0.14	
994	IP143	7.5		-1.01	
995	IP143	8.05		-0.06	
996		----		----	
997		----		----	
1011		----		----	
1039	D6560	9.079		1.73	
1040		----		----	

Determination of Asphaltenes on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065	D6560	6.5	R(0.05)	-2.74	
1082		----		----	
1108	D6560	8.2		0.20	
1121	IP143	7.97		-0.20	
1126		----		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212		----		----	
1218		----		----	
1259		----		----	
1264	D6560	7.84		-0.42	
1297		----		----	
1299		----		----	
1320		----		----	
1353		----		----	
1356	D6560	7.9		-0.32	
1381		----		----	
1402	IP143	8.0		-0.14	
1431	D6560	8.0346		-0.08	
1438		----		----	
1443		----		----	
1585	IP143	8.37		0.50	
1586	IP143	7.21		-1.51	
1636		----		----	
1648		----		----	
1665	D6560	9.55	R(0.05)	2.54	
1681	IP143	7.31		-1.34	
1720		----		----	
1730		----		----	
1740	D6560	8.10		0.03	
1741		----		----	
1776		----		----	
1810		----		----	
1811		----		----	
1854	IP143	8.00		-0.14	
1857	IP143	7.97		-0.20	
1862	D6560	8.25		0.29	
1906		----		----	
1942		7.3		-1.36	
1949	IP143	8.30		0.38	
1995	D6560	8		-0.14	
2129	IP143	8.09		0.01	
2146		----		----	
6026	D6560	8.3		0.38	
6075		----		----	
6092		----		----	
6112		----		----	
6114	IP143	8.0		-0.14	
6142		----		----	
6143	D6560	9.0		1.59	
6203	IP143	8.11		0.05	
6226	IP143	7.99		-0.16	
6238		----		----	
6266		----		----	
6319		----		----	
6335		----		----	
6364		----		----	
6373		----		----	
6404		----		----	
6406		----		----	
6438	D6560	7.92		-0.28	
6447		----		----	
6505		----		----	
6530	IP143	8.0	C	-0.14	first reported 10.27
6563		----		----	

Determination of Asphaltenes on sample #23275; results in %M/M

normality	suspect
n	58
outliers	6
mean (n)	8.083
st.dev. (n)	0.3591
R(calc.)	1.006
st.dev.(IP143:04R21)	0.5773
R(IP143:04R21)	1.617

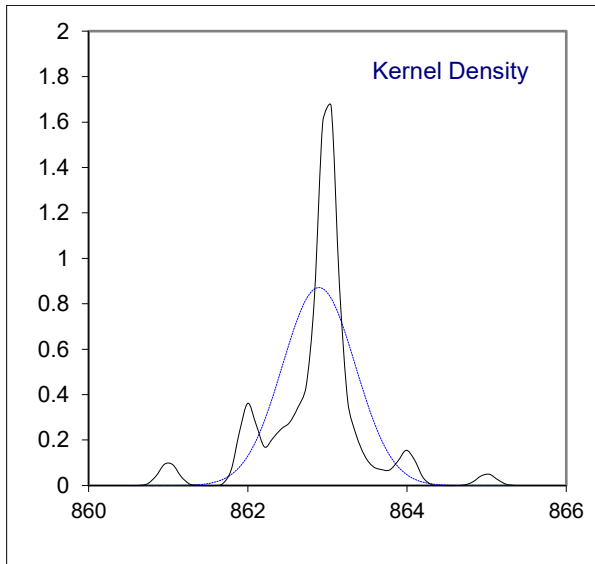
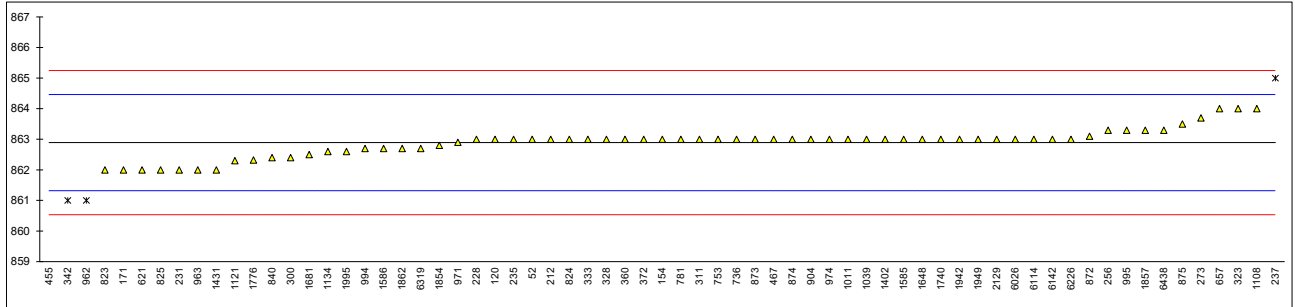


Determination of Calculated Carbon Aromaticity Index on sample #23275					
lab	method	value	mark	z(targ)	remarks
52	ISO8217	863	C	0.14	first reported 663
120	ISO8217	863		0.14	
150		----		----	
154	ISO8217	863		0.14	
159		----		----	
169		----		----	
171	ISO8217	862		-1.13	
212	ISO8217	863		0.14	
223		----		----	
225		----		----	
228	ISO8217	863		0.14	
231	ISO8217	862		-1.13	
235	ISO8217	863		0.14	
237	ISO8217	865	E,R(0.01)	2.68	calculation difference, iis calculated 863
238		----		----	
253		----		----	
256	ISO8217	863.3		0.52	
273	ISO8217	863.7	C	1.03	first reported 867.9
300	ISO8217	862.4		-0.62	
309		----		----	
311	ISO8217	863		0.14	
313		----		----	
323	ISO8217	864		1.41	
328	ISO8217	863		0.14	
333	ISO8217	863		0.14	
334		----		----	
339		----		----	
342	ISO8217	861	ex	-2.41	test result excluded as statistical outlier in Kin. Visc. at 50 °C
349		----		----	
352		----		----	
360	ISO8217	863		0.14	
372	ISO8217	863		0.14	
381		----		----	
391		----		----	
404		----		----	
445		----		----	
447		----		----	
455	ISO8217	839.0	ex	-30.41	test result excluded as statistical outlier in Density at 15 °C
467	ISO8217	863		0.14	
507		----		----	
541		----		----	
551		----		----	
575		----		----	
621	ISO8217	862		-1.13	
633		----		----	
634		----		----	
657	ISO8217	864		1.41	
710		----		----	
736	ISO8217	863.0		0.14	
752		----		----	
753	ISO8217	863		0.14	
778		----		----	
781	ISO8217	863		0.14	
785		----		----	
798		----		----	
823	ISO8217	862		-1.13	
824	ISO8217	863		0.14	
825	ISO8217	862		-1.13	
840	ISO8217	862.4		-0.62	
872	ISO8217	863.1		0.27	
873	ISO8217	863		0.14	
874	ISO8217	863.0		0.14	
875	ISO8217	863.5		0.78	
887		----		----	
904	ISO8217	863.0		0.14	
962	ISO8217	861	E,R(0.01)	-2.41	calculation difference, iis calculated 863
963	ISO8217	862		-1.13	
971	ISO8217	862.9		0.01	
974	ISO8217	863		0.14	
994	ISO8217	862.7		-0.24	
995	ISO8217	863.3		0.52	
996		----		----	
997		----		----	
1011	ISO8217	863		0.14	
1039	ISO8217	863		0.14	
1040		----		----	

Determination of Calculated Carbon Aromaticity Index on sample #23275					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108	ISO8217	864		1.41	
1121	ISO8217	862.3		-0.75	
1126		----		----	
1134	ISO8217	862.6		-0.37	
1191		----		----	
1205		----		----	
1212		----		----	
1218		----		----	
1259		----		----	
1264		----		----	
1297		----		----	
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381		----		----	
1402	ISO8217	863		0.14	
1431	ISO8217	862		-1.13	
1438		----		----	
1443		----		----	
1585	ISO8217	863		0.14	
1586	ISO8217	862.7		-0.24	
1636		----		----	
1648	ISO8217	863		0.14	
1665		----		----	
1681	ISO8217	862.5	C	-0.50	first reported 838.8
1720		----		----	
1730		----		----	
1740	ISO8217	863		0.14	
1741		----		----	
1776	ISO8217	862.32		-0.73	
1810		----		----	
1811		----		----	
1854	ISO8217	862.8		-0.12	
1857	ISO8217	863.3		0.52	
1862	ISO8217	862.7		-0.24	
1906		----		----	
1942	ISO8217	863		0.14	
1949	ISO8217	863		0.14	
1995	ISO8217	862.6		-0.37	
2129	ISO8217	863		0.14	
2146		----		----	
6026	ISO8217	863		0.14	
6075		----		----	
6092		----		----	
6112		----		----	
6114	ISO8217	863		0.14	
6142	ISO8217	863		0.14	
6143		----		----	
6203		----		----	
6226	ISO8217	863		0.14	
6238		----		----	
6266		----		----	
6319	ISO8217	862.7		-0.24	
6335		----		----	
6364		----		----	
6373		----		----	
6404		----		----	
6406		----		----	
6438	ISO8217	863.3		0.52	
6447		----		----	
6505		----		----	
6530		----		----	
6563		----		----	

Determination of Calculated Carbon Aromaticity Index on sample #23275

normality	OK
n	63
outliers	2 + 2ex
mean (n)	862.891
st.dev. (n)	0.4581
R(calc.)	1.283
st.dev.(ISO8217:17)	0.7857
R(ISO8217:17)	2.2

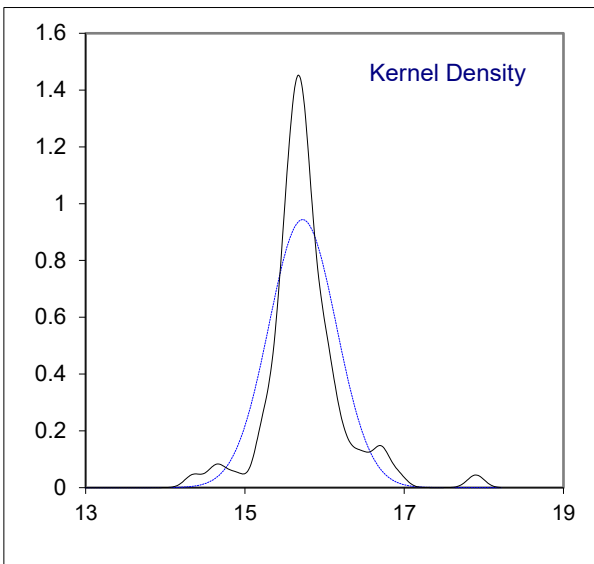
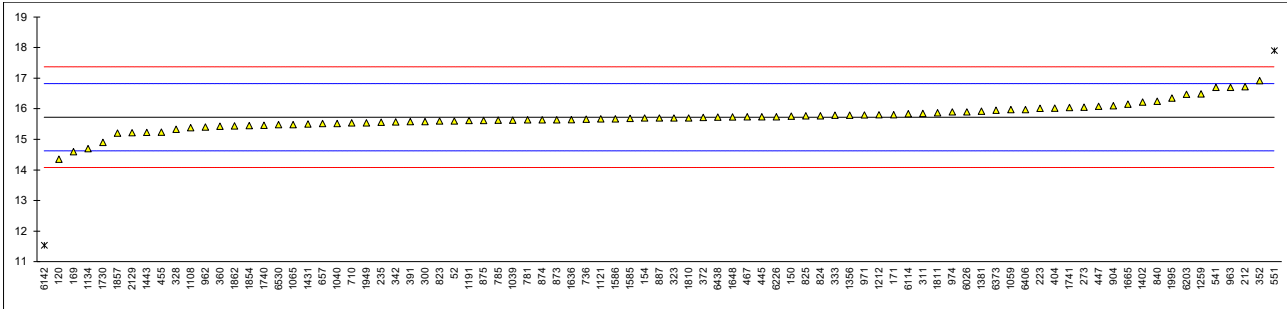


Determination of Carbon Residue micro method on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
52	D4530	15.6		-0.23	
120	D4530	14.35		-2.50	
150	D4530	15.76		0.07	
154	D4530	15.7		-0.04	
159		----		----	
169	D4530	14.6		-2.05	
171	ISO10370	15.81		0.16	
212	ISO10370	16.72		1.81	
223	D4530	16.0173		0.53	
225		----		----	
228		----		----	
231		----		----	
235	ISO10370	15.56		-0.30	
237		----		----	
238		----		----	
253		----		----	
256		----		----	
273	D4530	16.05		0.59	
300	D4530	15.58		-0.26	
309		----		----	
311	ISO10370	15.85		0.23	
313		----		----	
323	ISO10370	15.7		-0.04	
328	ISO10370	15.33		-0.72	
333	ISO10370	15.79		0.12	
334		----		----	
339		----		----	
342	D4530	15.57		-0.28	
349		----		----	
352	ISO10370	16.92		2.18	
360	D4530	15.43		-0.54	
372	ISO10370	15.72		-0.01	
381		----		----	
391	ISO10370	15.58		-0.26	
404	ISO10370	16.02		0.54	
445	ISO10370	15.74		0.03	
447	IP398	16.08		0.65	
455	IP398	15.24		-0.88	
467	ISO10370	15.74		0.03	
507		----		----	
541	D4530	16.7		1.78	
551	D4530	17.9	R(0.01)	3.96	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657	ISO10370	15.52		-0.37	
710	D4530	15.54		-0.34	
736	ISO10370	15.66		-0.12	
752		----		----	
753		----		----	
778		----		----	
781	ISO10370	15.64		-0.15	
785	ISO10370	15.63		-0.17	
798		----		----	
823	ISO10370	15.6		-0.23	
824	ISO10370	15.77		0.08	
825	ISO10370	15.77		0.08	
840	ISO10370	16.243		0.94	
872		----		----	
873	D4530	15.64		-0.15	
874	ISO10370	15.64		-0.15	
875	ISO10370	15.62		-0.19	
887	D4530	15.7		-0.04	
904	ISO10370	16.1		0.68	
962	D4530	15.4		-0.59	
963	ISO10370	16.7		1.78	
971	ISO10370	15.80		0.14	
974	D4530	15.9		0.32	
994		----		----	
995		----		----	
996		----		----	
997		----		----	
1011		----		----	
1039	ISO10370	15.63		-0.17	
1040	ISO10370	15.52		-0.37	

Determination of Carbon Residue micro method on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
1059	ISO10370	15.97		0.45	
1065	D4530	15.4805		-0.44	
1082		----		----	
1108	ISO10370	15.38		-0.63	
1121	ISO10370	15.67		-0.10	
1126		----		----	
1134	IP398	14.7		-1.86	
1191	ISO10370	15.6174		-0.19	
1205		----		----	
1212	ISO10370	15.804		0.15	
1218		----		----	
1259	ISO10370	16.49		1.39	
1264		----		----	
1297		----		----	
1299		----		----	
1320		----		----	
1353		----		----	
1356	ISO10370	15.79		0.12	
1381	ISO10370	15.925		0.37	
1402	IP398	16.22		0.90	
1431	D4530	15.5015		-0.41	
1438		----		----	
1443	ISO10370	15.230		-0.90	
1585	D4530	15.684		-0.07	
1586	ISO10370	15.67		-0.10	
1636	ISO10370	15.646		-0.14	
1648	ISO10370	15.735		0.02	
1665	D4530	16.15		0.78	
1681		----		----	
1720		----		----	
1730	ISO10370	14.9		-1.50	
1740	D4530	15.46		-0.48	
1741	ISO10370	16.04		0.57	
1776		----		----	
1810	D4530	15.7		-0.04	
1811	ISO10370	15.87		0.27	
1854	ISO10370	15.45		-0.50	
1857	ISO10370	15.202		-0.95	
1862	D4530	15.44		-0.52	
1906		----		----	
1942		----		----	
1949	ISO10370	15.54		-0.34	
1995	D4530	16.35		1.14	
2129	ISO10370	15.22		-0.92	
2146		----		----	
6026	D4530	15.9		0.32	
6075		----		----	
6092		----		----	
6112		----		----	
6114	ISO10370	15.84		0.21	
6142	ISO10370	11.54	R(0.01)	-7.62	
6143		----		----	
6203	ISO10370	16.472		1.36	
6226	ISO10370	15.74		0.03	
6238		----		----	
6266		----		----	
6319		----		----	
6335		----		----	
6364		----		----	
6373	ISO10370	15.9525		0.42	
6404		----		----	
6406	ISO10370	15.97		0.45	
6438	D4530	15.73		0.01	
6447		----		----	
6505		----		----	
6530	D4530	15.48		-0.44	
6563		----		----	

Determination of Carbon Residue micro method on sample #23275; results in %M/M

normality	not OK
n	83
outliers	2
mean (n)	15.7241
st.dev. (n)	0.4229
R(calc.)	1.1843
st.dev.(ISO10370:14)	0.54941
R(ISO10370:14)	1.5383
compare	
R(D4530:15R20)	0.8765

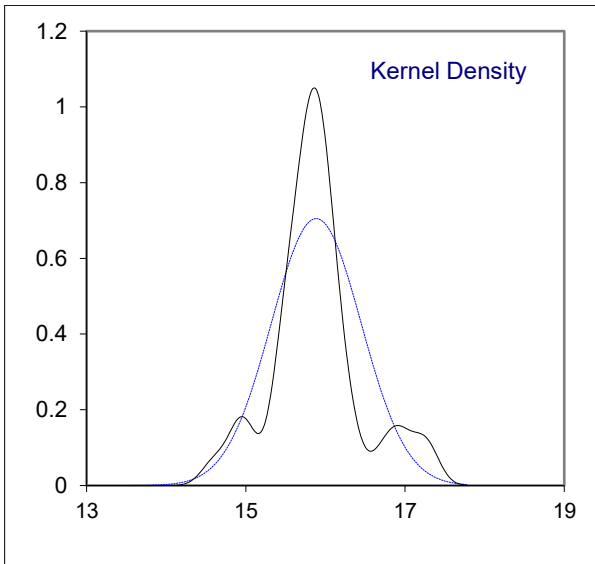
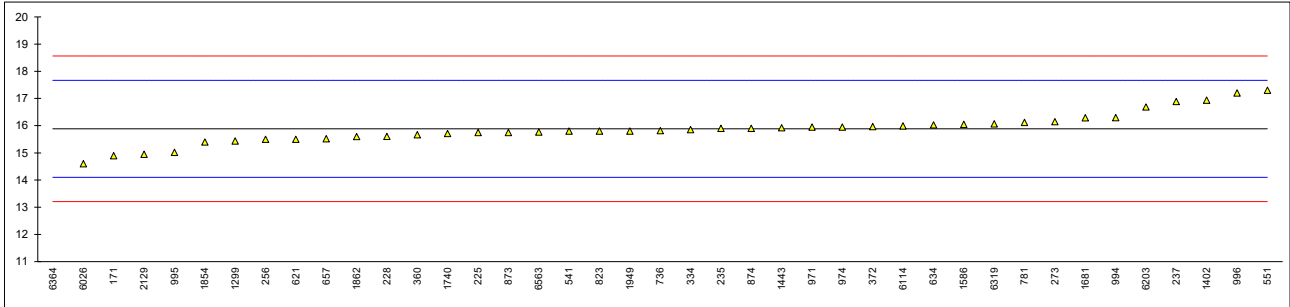


Determination of Conradson Carbon Residue on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
52		----		----	
120		----		----	
150		----		----	
154		----		----	
159		----		----	
169		----		----	
171	D189	14.9		-1.10	
212		----		----	
223		----		----	
225	D4530	15.75		-0.15	
228	D189	15.606		-0.31	
231		----		----	
235	D189	15.90		0.02	
237	D189	16.89		1.13	
238		----		----	
253		----		----	
256	D189	15.5		-0.43	
273	D189	16.15		0.30	
300		----		----	
309		----		----	
311		----		----	
313		----		----	
323		----		----	
328		----		----	
333		----		----	
334	D189	15.86		-0.03	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	D189	15.67		-0.24	
372	D189	15.97		0.10	
381		----		----	
391		----		----	
404		----		----	
445		----		----	
447		----		----	
455		----		----	
467		----		----	
507		----		----	
541	D189	15.8		-0.09	
551	D189	17.3		1.59	
575		----		----	
621	D189	15.5		-0.43	
633		----		----	
634	D189	16.03		0.16	
657	D189	15.52		-0.41	
710		----		----	
736	D189	15.82		-0.07	
752		----		----	
753		----		----	
778		----		----	
781	D189	16.12		0.26	
785		----		----	
798		----		----	
823	D189	15.8		-0.09	
824		----		----	
825		----		----	
840		----		----	
872		----		----	
873	D189	15.75		-0.15	
874	D189	15.90		0.02	
875		----		----	
887		----		----	
904		----		----	
962		----		----	
963		----		----	
971	D189	15.95		0.07	
974	D189	15.95		0.07	
994	D189	16.3		0.47	
995	D189	15.02		-0.97	
996	D189	17.2		1.47	
997		----		----	
1011		----		----	
1039		----		----	
1040		----		----	

Determination of Conradson Carbon Residue on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108		----		----	
1121		----		----	
1126		----		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212		----		----	
1218		----		----	
1259		----		----	
1264		----		----	
1297		----		----	
1299	D4530	15.44		-0.50	
1320		----		----	
1353		----		----	
1356		----		----	
1381		----		----	
1402	IP13	16.94		1.18	
1431		----		----	
1438		----		----	
1443	ISO6615	15.923		0.04	
1585		----		----	
1586	ISO6615	16.05		0.19	
1636		----		----	
1648		----		----	
1665		----		----	
1681	ISO6615	16.29		0.45	
1720		----		----	
1730		----		----	
1740	D4530	15.71		-0.20	
1741		----		----	
1776		----		----	
1810		----		----	
1811		----		----	
1854	D4530	15.40		-0.54	
1857		----		----	
1862	D189	15.60		-0.32	
1906		----		----	
1942		----		----	
1949	D189	15.80		-0.09	
1995		----		----	
2129	D189	14.95		-1.05	
2146		----		----	
6026	D189	14.6		-1.44	
6075		----		----	
6092		----		----	
6112		----		----	
6114	D189	15.99		0.12	
6142		----		----	
6143		----		----	
6203	D189	16.689		0.90	
6226		----		----	
6238		----		----	
6266		----		----	
6319	D189	16.07		0.21	
6335		----		----	
6364	D189	6.71	R(0.01)	-10.28	
6373		----		----	
6404		----		----	
6406		----		----	
6438		----		----	
6447		----		----	
6505		----		----	
6530		----		----	
6563	D189	15.77		-0.13	

Determination of Conradson Carbon Residue on sample #23275; results in %M/M

normality	suspect
n	40
outliers	1
mean (n)	15.8844
st.dev. (n)	0.5660
R(calc.)	1.5847
st.dev.(D189:06R19)	0.89220
R(D189:06R19)	2.4982

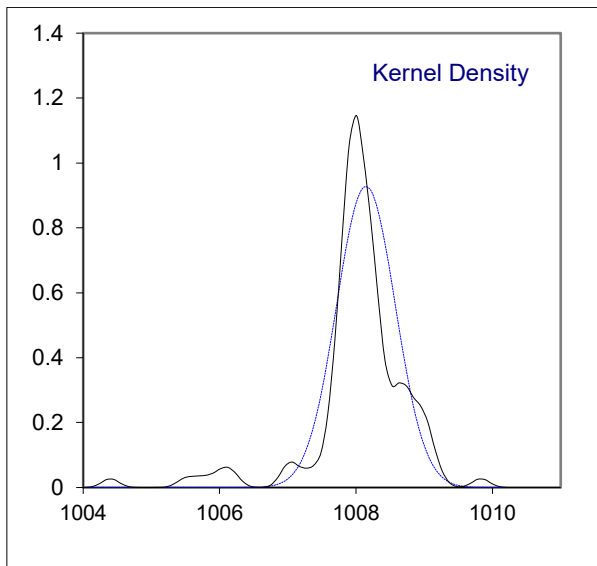
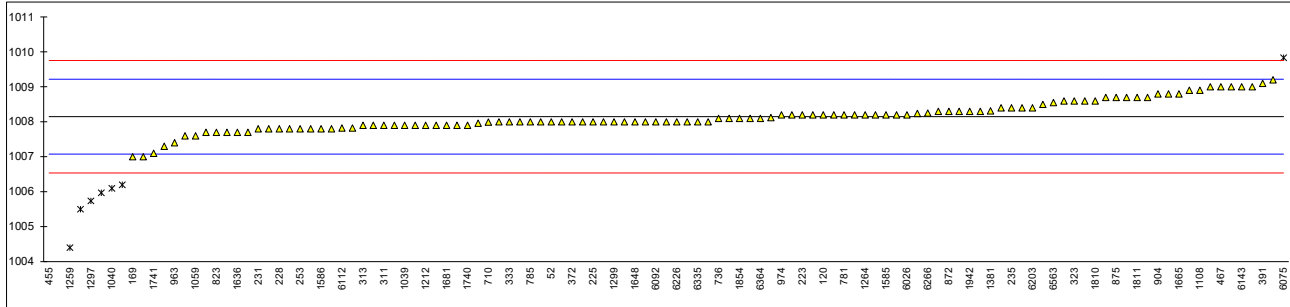


Determination of Density at 15 °C on sample #23275; results in kg/m ³					
lab	method	value	mark	z(targ)	remarks
52	D4052	1008		-0.27	
120	D4052	1008.2		0.10	
150		-----		-----	
154		-----		-----	
159		-----		-----	
169	D4052	1007		-2.14	
171	ISO12185	1008.0	C	-0.27	first reported 1.0081 kg/m ³
212	ISO12185	1008.7		1.04	
223	D4052	1008.2		0.10	
225	D4052	1008		-0.27	
228	D1298	1007.8		-0.64	
231	D4052	1007.8		-0.64	
235	ISO12185	1008.40		0.48	
237	D4052	1008.6		0.85	
238	D1298	1005.5	C,R(0.01)	-4.94	first reported 1000.9
253	D4052	1007.8		-0.64	
256	D1298	1008.6		0.85	
273	D1298	1009.0	C	1.60	first reported 1009.9
300	D1298	1008.0		-0.27	
309		-----		-----	
311	ISO12185	1007.9		-0.46	
313	ISO12185	1007.9		-0.46	
323	ISO12185	1008.6		0.85	
328	ISO12185	1008.4		0.48	
333	ISO12185	1008.0		-0.27	
334	ISO12185	1008		-0.27	
339		-----		-----	
342	D4052	1007.8		-0.64	
349		-----		-----	
352	ISO12185	1007.9		-0.46	
360	ISO12185	1008.3		0.29	
372	D4052	1008.0		-0.27	
381	ISO12185	1008.7		1.04	
391	ISO12185	1009.1		1.78	
404		-----		-----	
445	ISO12185	1009.2		1.97	
447	IP365	996.5	R(0.01)	-21.74	
455	IP365	983.9	R(0.01)	-45.26	
467	ISO12185	1009		1.60	
507		-----		-----	
541		-----		-----	
551	D4052	1008.2		0.10	
575	D1298	1007.6	C	-1.02	first reported 979.7
621	D4052	1007		-2.14	
633	D1298	1005.97	C,R(0.01)	-4.06	first reported 1009.97
634	ISO12185	1006.2	R(0.01)	-3.63	
657	ISO12185	1009.0	C	1.60	first reported 1009.5
710	ISO12185	1007.99		-0.29	
736	ISO12185	1008.1		-0.08	
752		-----		-----	
753	ISO12185	1008.0		-0.27	
778	D4052	1008.2		0.10	
781	ISO12185	1008.2		0.10	
785	ISO12185	1008.0		-0.27	
798		-----		-----	
823	ISO12185	1007.7		-0.83	
824	ISO12185	1007.7		-0.83	
825	ISO12185	1007.9		-0.46	
840	ISO12185	1007.96		-0.35	
872	ISO12185	1008.3		0.29	
873	ISO12185	1008.3		0.29	
874	ISO12185	1008.2		0.10	
875	D1298	1008.7		1.04	
887		-----		-----	
904	ISO12185	1008.8		1.22	
962	D4052	1007.8	C	-0.64	first reported 1006.0
963	ISO12185	1007.4		-1.39	
971	ISO12185	1008.0		-0.27	
974	D1298	1008.2		0.10	
994	ISO12185	1008.0		-0.27	
995	ISO12185	1008.2		0.10	
996	D1298	1008.8		1.22	
997	ISO12185	1008.1		-0.08	
1011	ISO12185	1008.5		0.66	
1039	ISO12185	1007.9		-0.46	
1040	ISO12185 *)	1006.1	R(0.01)	-3.82	*) calc. from 70° acc. table X Total Carbon: ASTM D 7662

Determination of Density at 15 °C on sample #23275; results in kg/m ³					
lab	method	value	mark	z(targ)	remarks
1059	ISO12185	1007.6		-1.02	
1065	D4052	1008.9		1.41	
1082		----		----	
1108	ISO12185	1008.9		1.41	
1121	ISO12185	1007.8		-0.64	
1126	ISO12185	1008.12		-0.05	
1134	IP365	1007.9		-0.46	
1191	ISO12185	1008.24		0.18	
1205		----		----	
1212	ISO12185	1007.9		-0.46	
1218		----		----	
1259	ISO12185	1004.4	R(0.01)	-6.99	
1264	D4052	1008.2		0.10	
1297	D4052	1005.74	C,R(0.01)	-4.49	first reported 1.00574 kg/m ³
1299	D4052	1008		-0.27	
1320		----		----	
1353		----		----	
1356	ISO12185	1007.9		-0.46	
1381	ISO12185	1008.31		0.31	
1402	IP365	1008.2		0.10	
1431	ISO12185	1007.70		-0.83	
1438		----		----	
1443	ISO3675	1008.0		-0.27	
1585	ISO12185	1008.2		0.10	
1586	ISO12185	1007.8		-0.64	
1636	D4052	1007.7		-0.83	
1648	ISO12185	1008.0		-0.27	
1665	D4052	1008.8		1.22	
1681	ISO12185	1007.9	C	-0.46	first reported 984.2
1720		----		----	
1730	ISO12185	1007.9		-0.46	
1740	ISO12185	1007.9		-0.46	
1741	ISO12185	1007.1		-1.95	
1776	ISO12185	1007.30		-1.58	
1810	ISO12185	1008.6		0.85	
1811	ISO12185	1008.7		1.04	
1854	D4052	1008.1		-0.08	
1857	ISO12185	1008.4		0.48	
1862	D4052	1008.1		-0.08	
1906		----		----	
1942	D1298	1008.3		0.29	
1949	ISO12185	1008.2		0.10	
1995	D4052	1007.8		-0.64	
2129	D4052	1008.0		-0.27	
2146		----		----	
6026	D1298	1008.2		0.10	
6075	ISO12185	1009.83	R(0.01)	3.14	
6092	ISO12185	1008.0		-0.27	
6112	ISO12185	1007.82		-0.61	
6114	ISO12185	1008.0		-0.27	
6142	ISO12185	1008.3		0.29	
6143	D1298	1009.0		1.60	
6203	D4052	1008.4		0.48	
6226	ISO12185	1008.0		-0.27	
6238		----		----	
6266	D4052	1008.25		0.20	
6319	D1298	1008.0		-0.27	
6335	D1298	1008		-0.27	
6364	D1298	1008.1		-0.08	
6373	ISO12185	1007.82		-0.61	
6404	ISO12185	1008		-0.27	
6406	ISO12185	1007.7		-0.83	
6438	D4052	1008.7		1.04	
6447		----		----	
6505		----		----	
6530	D4052	1009.0		1.60	
6563	D4052	1008.55		0.76	

Determination of Density at 15 °C on sample #23275; results in kg/m³

normality	OK
n	110
outliers	9
mean (n)	1008.145
st.dev. (n)	0.4298
R(calc.)	1.203
st.dev.(ISO12185:96)	0.5357
R(ISO12185:96)	1.5

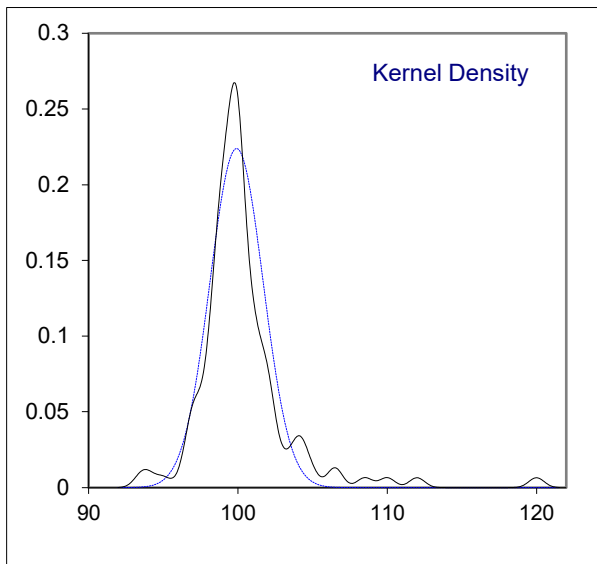
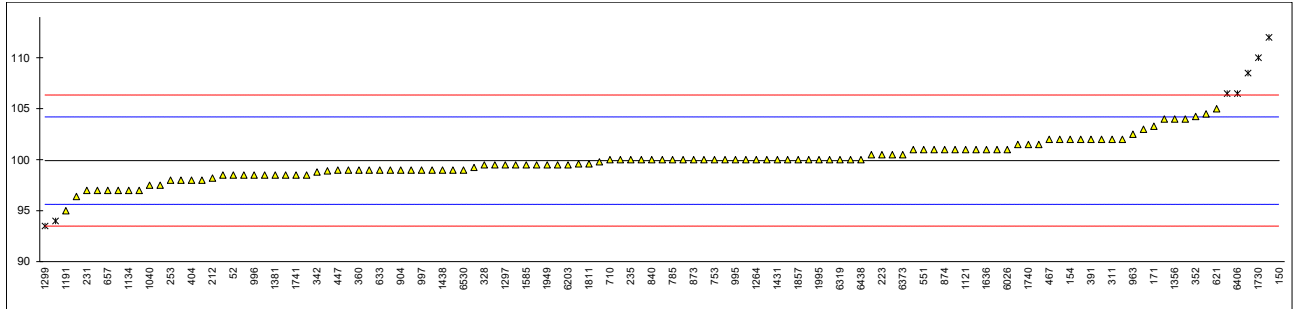


Determination of Flash Point PMcc on sample #23275; results in °C					
lab	method	value	mark	z(targ)	remarks
52	D93-B	98.5		-0.66	
120	D93-B	100.0		0.04	
150	ISO2719	120.0	R(0.01)	9.37	
154	D93-B	102	C	0.97	first reported 105
159		----		----	
169	D93-B	99.0		-0.43	
171	ISO2719-A	103.3	C	1.58	first reported 218
212	ISO2719-B	98.2		-0.80	
223	D93-B	100.5		0.27	
225	D93-B	101.0		0.51	
228	D93-B	102.0		0.97	
231	D93-B	97.0		-1.36	
235	ISO2719-B	100.0		0.04	
237	D93-B	100.0		0.04	
238	D93-B	99.0		-0.43	
253	D93-B	98		-0.89	
256	D93-B	100.0		0.04	
273	D93-B	101.0		0.51	
300	D93-B	98.0		-0.89	
309		----		----	
311	D93-B	102.0		0.97	
313	ISO2719-B	104.0		1.91	
323	D93-B	106.5	R(0.05)	3.07	
328	ISO2719-B	99.5		-0.19	
333	ISO2719-B	100.0		0.04	
334	ISO2719-A	97		-1.36	
339		----		----	
342	D93-B	98.8		-0.52	
349		----		----	
352	ISO2719-B	104.25		2.02	
360	D93-B	99.0		-0.43	
372	D93-B	100.0		0.04	
381	ISO2719-B	>90		----	
391	ISO2719-A	102		0.97	
404	ISO2719-A	98.0		-0.89	
445	ISO2719-A	104.5		2.14	
447	D93-B	99.0		-0.43	
455	D93-B	96.4		-1.64	
467	ISO2719-B	102.0		0.97	
507		----		----	
541		----		----	
551	D93-A	101.0		0.51	
575	D93-B	98		-0.89	
621	D93-B	105		2.37	
633	D93-B	99.0		-0.43	
634	ISO2719	99.25		-0.31	
657	D93-B	97.0		-1.36	
710	D93-B	100.0		0.04	
736	ISO2719	101.0		0.51	
752		----		----	
753	D93-B	100.0		0.04	
778	D93-B	103		1.44	
781	ISO2719-B	100.5		0.27	
785	D93-B	100.0		0.04	
798		----		----	
823	ISO2719-B	99.6		-0.15	
824	ISO2719-B	98.5		-0.66	
825	ISO2719-B	102.0		0.97	
840	ISO2719-B	100.0	C	0.04	first reported 107.0
872	ISO2719-B	98.5		-0.66	
873	D93-B	100.0		0.04	
874	ISO2719-B	101.0		0.51	
875	D93-B	100.5		0.27	
887		----		----	
904	ISO2719-B	99.0		-0.43	
962	D93-B	102.0		0.97	
963	ISO2719-B	102.5		1.21	
971	ISO2719-B	99.0		-0.43	
974	D93-B	99.0		-0.43	
994	D93-B	100.0		0.04	
995	D93-B	100.0		0.04	
996	D93-B	98.5		-0.66	
997	D93-B	99.0		-0.43	
1011	ISO2719-B	100.0		0.04	
1039	ISO2719-B	99.5		-0.19	
1040	ISO2719-A	97.5		-1.13	

Determination of Flash Point PMcc on sample #23275; results in °C					
lab	method	value	mark	z(targ)	remarks
1059	ISO2719-B	97.0		-1.36	
1065	D93-A	94	R(0.05)	-2.76	
1082		----		----	
1108	ISO2719-B	99.0		-0.43	
1121	ISO2719-B	101.0	C	0.51	first reported 94.51
1126		----		----	
1134	ISO2719-B	97.0		-1.36	
1191	ISO2719-A	95		-2.29	
1205	D93-B	101.0		0.51	
1212	ISO2719-B	101.5		0.74	
1218		----		----	
1259	ISO2719-A	98.5	C	-0.66	first reported 94.5
1264	D93-B	100		0.04	
1297	D93-B	99.5		-0.19	
1299	D93-B	93.5	R(0.05)	-2.99	
1320		----		----	
1353		----		----	
1356	ISO2719-B	104.0		1.91	
1381	ISO2719-B	98.50		-0.66	
1402	IP34-B	100.0		0.04	
1431	D93-B	100.0		0.04	
1438	D93-B	99		-0.43	
1443	ISO2719-A	99.5		-0.19	
1585	D93-B	99.5		-0.19	
1586	ISO2719-B	97.0		-1.36	
1636	D93-B	101.0		0.51	
1648	ISO2719-A	101.0		0.51	
1665	D93-B	112	R(0.01)	5.64	
1681	ISO2719-B	98.5		-0.66	
1720		----		----	
1730	D93-B	110	R(0.01)	4.71	
1740	ISO2719-B	101.5		0.74	
1741	ISO2719-B	98.5		-0.66	
1776	ISO2719-B	99.5		-0.19	
1810	D93-A	99.8		-0.05	
1811	ISO2719-A	99.6		-0.15	
1854	D93-B	100		0.04	
1857	D93-B	100.0		0.04	
1862	D93-B	100.0		0.04	
1906		----		----	
1942		----		----	
1949	ISO2719-B	99.5		-0.19	
1995	D93-B	100		0.04	
2129	ISO2719-B	104.0	C	1.91	first reported 104.5
2146		----		----	
6026	ISO2719-B	101.0		0.51	
6075		----		----	
6092	D93-B	99.0		-0.43	
6112		----		----	
6114	ISO2719-B	97.5		-1.13	
6142	ISO2719-B	99.5		-0.19	
6143	D93-B	100		0.04	
6203	ISO2719-B	99.5		-0.19	
6226	ISO2719-B	98.9		-0.47	
6238		----		----	
6266	D93-B	108.5	R(0.05)	4.01	
6319	D93-B	100.0		0.04	
6335	ISO2719-A	100		0.04	
6364	D93-B	102.0		0.97	
6373	ISO2719-B	100.5		0.27	
6404	ISO2719-B	101.5		0.74	
6406	ISO2719-B	106.5	R(0.05)	3.07	
6438	D93-B	100.0		0.04	
6447		----		----	
6505		----		----	
6530	D93-B	99.0		-0.43	
6563	D93-B	98.5		-0.66	

Determination of Flash Point PMcc on sample #23275; results in °C

normality	OK
n	111
outliers	8
mean (n)	99.915
st.dev. (n)	1.7817
R(calc.)	4.989
st.dev.(ISO2719-B:16)	2.1429
R(ISO2719-B:16)	6
compare	
R(D93-B:20)	6

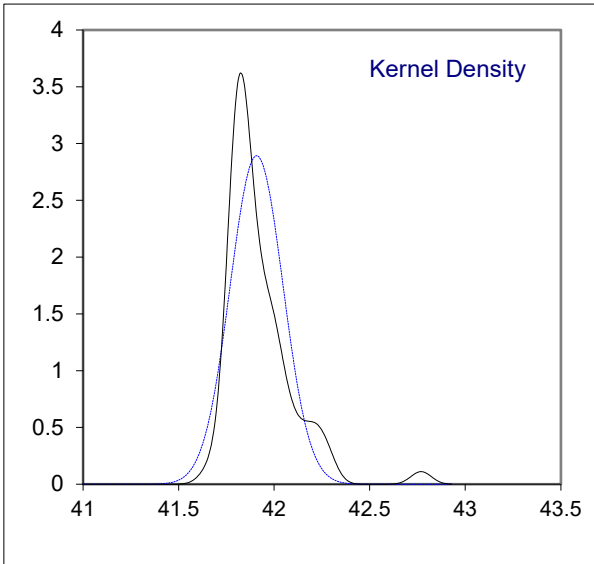
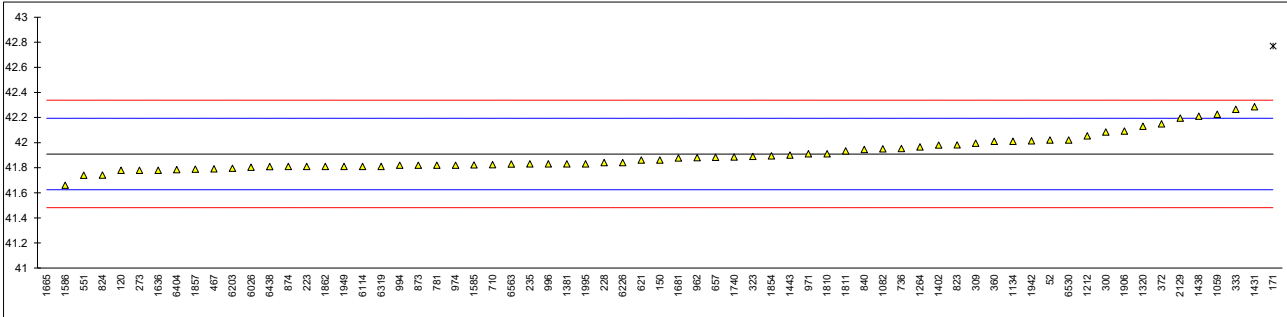


Determination of Heat of Combustion (Gross) on sample #23275; results in MJ/kg					
lab	method	value	mark	z(targ)	remarks
52	D240	42.020		0.78	
120	D4868	41.78		-0.90	
150	D240	41.861		-0.34	
154		----		----	
159		----		----	
169		----		----	
171	D240	42.770	R(0.01)	6.03	
212		----		----	
223	D240	41.81		-0.69	
225		----		----	
228	D4868	41.84		-0.48	
231		----		----	
235	D4868	41.83		-0.55	
237		----		----	
238		----		----	
253		----		----	
256		----		----	
273	D4868	41.78		-0.90	
300	D4868	42.084		1.22	
309	D240	41.995		0.60	
311		----		----	
313		----		----	
323	D240	41.890		-0.13	
328		----		----	
333	D240	42.265		2.49	
334		----		----	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	D4809	42.0099		0.71	
372	D4868	42.15		1.69	
381		----		----	
391		----		----	
404		----		----	
445		----		----	
447		----		----	
455		----		----	
467	D4868	41.79		-0.83	
507		----		----	
541		----		----	
551	D240	41.74		-1.18	
575		----		----	
621	D240	41.86		-0.34	
633	D4868	----		----	reported in a different unit, 21677 BTU/lb
634	D240	----		----	reported in a different unit, 17968.5 BTU/lb
657	D240	41.8818		-0.19	
710	D4868	41.824		-0.60	
736	D240	41.952		0.30	
752		----		----	
753		----		----	
778		----		----	
781	D4868	41.82		-0.62	
785		----		----	
798		----		----	
823	KS M2057	41.981		0.50	
824	KS M2057	41.7406		-1.18	
825		----		----	
840	D240	41.945		0.25	
872		----		----	
873	D4868	41.82		-0.62	
874	D4868	41.81		-0.69	
875		----		----	
887		----		----	
904		----		----	
962	D4868	41.88		-0.20	
963		----		----	
971	D240	41.91		0.01	
974	D4868	41.82		-0.62	
994	D4868	41.82		-0.62	
995		----		----	
996	D4868	41.83		-0.55	
997		----		----	
1011		----		----	
1039		----		----	
1040		----		----	

Determination of Heat of Combustion (Gross) on sample #23275; results in MJ/kg					
lab	method	value	mark	z(targ)	remarks
1059	D240	42.226		2.22	
1065		----		----	
1082	D240	41.95055		0.29	
1108		----		----	
1121		----		----	
1126		----		----	
1134	D240	42.0106		0.71	
1191		----		----	
1205		----		----	
1212	D240	42.054		1.01	
1218		----		----	
1259		----		----	
1264	D240	41.966		0.40	
1297		----		----	
1299		----		----	
1320	D240	42.13		1.55	
1353		----		----	
1356		----		----	
1381	D4868	41.83		-0.55	
1402	IP12	41.98		0.50	
1431	D240	42.2867		2.64	
1438		42.21		2.11	
1443	BDS17413	41.90		-0.06	
1585	D4868	41.822		-0.61	
1586	D240	41.66		-1.74	
1636	D4868	41.78		-0.90	
1648		----		----	
1665		40.02	R(0.01)	-13.22	
1681	D4868	41.878	C	-0.22	first reported 42.887
1720		----		----	
1730		----		----	
1740	D240	41.885		-0.17	
1741		----		----	
1776		----		----	
1810	D240	41.91	C	0.01	first reported 39.75
1811		41.9336		0.17	
1854	D240	41.895		-0.10	
1857	D4868	41.788		-0.85	
1862	D4868	41.810		-0.69	
1906	D4809	42.091		1.27	
1942		42.014		0.73	
1949	Calculated	41.810		-0.69	
1995	D4868	41.83		-0.55	
2129	D240	42.196		2.01	
2146		----		----	
6026	D4868	41.804		-0.74	
6075		----		----	
6092		----		----	
6112		----		----	
6114	D4868	41.81		-0.69	
6142		----		----	
6143		----		----	
6203		41.7948		-0.80	
6226	D4868	41.84		-0.48	
6238		----		----	
6266		----		----	
6319	D4868	41.81		-0.69	
6335		----		----	
6364		----		----	
6373		----		----	
6404	D240	41.785	C	-0.87	first reported 41.075
6406		----		----	
6438		41.809		-0.70	
6447		----		----	
6505		----		----	
6530	Calculated	42.020		0.78	
6563	D4868	41.829		-0.56	

Determination of Heat of Combustion (Gross) on sample #23275; results in MJ/kg

normality	suspect
n	65
outliers	2
mean (n)	41.9090
st.dev. (n)	0.13800
R(calc.)	0.3864
st.dev.(D240:19)	0.14286
R(D240:19)	0.40

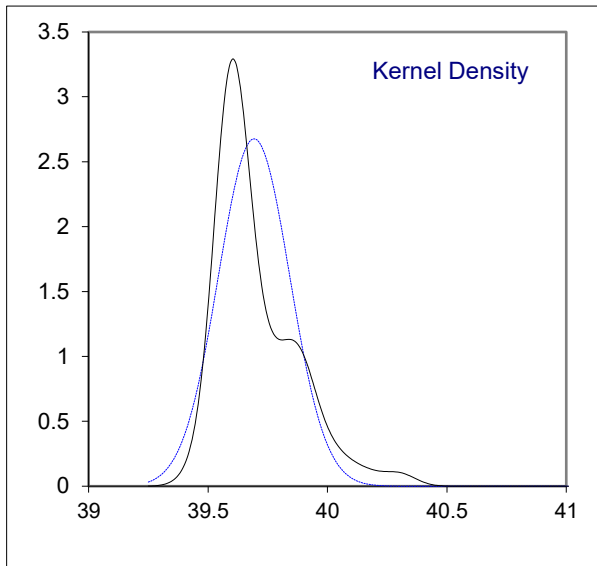
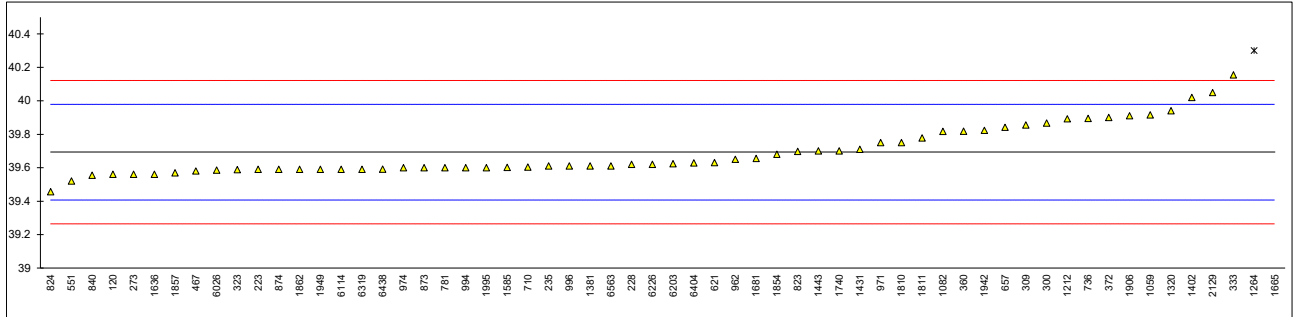


Determination of Heat of Combustion (Net) on sample #23275; results in MJ/kg					
lab	method	value	mark	z(targ)	remarks
52		----		----	
120	D4868	39.56		-0.93	
150		----		----	
154		----		----	
159		----		----	
169		----		----	
171		----		----	
212		----		----	
223	D240	39.59		-0.72	
225		----		----	
228	D4868	39.62		-0.51	
231		----		----	
235	D4868	39.61		-0.58	
237		----		----	
238		----		----	
253		----		----	
256		----		----	
273	D4868	39.56		-0.93	
300	D4868	39.867		1.22	
309	D240	39.855		1.13	
311		----		----	
313		----		----	
323	D240	39.588		-0.74	
328		----		----	
333	D240	40.155		3.23	
334		----		----	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	D4809	39.8179		0.87	
372	D4868	39.9		1.45	
381		----		----	
391		----		----	
404		----		----	
445		----		----	
447		----		----	
455		----		----	
467	D4868	39.58		-0.79	
507		----		----	
541		----		----	
551	D240	39.52		-1.21	
575		----		----	
621	D240	39.63		-0.44	
633	D4868	----		----	reported in a different unit, 19400 BTU/lb
634	D240	----		----	reported in a different unit, 17014 BTU/lb
657	D240	39.8410		1.04	
710	D4868	39.604		-0.62	
736	D240	39.895		1.41	
752		----		----	
753		----		----	
778		----		----	
781	D4868	39.60		-0.65	
785		----		----	
798		----		----	
823	KS M2057	39.697		0.03	
824	KS M2057	39.4563		-1.66	
825		----		----	
840	D240	39.555		-0.97	
872		----		----	
873	D4868	39.60		-0.65	
874	D4868	39.59		-0.72	
875		----		----	
887		----		----	
904		----		----	
962	D4868	39.65		-0.30	
963		----		----	
971	D240	39.75		0.40	
974	D4868	39.60		-0.65	
994	D4868	39.60		-0.65	
995		----		----	
996	D4868	39.61		-0.58	
997		----		----	
1011		----		----	
1039		----		----	
1040		----		----	

Determination of Heat of Combustion (Net) on sample #23275; results in MJ/kg					
lab	method	value	mark	z(targ)	remarks
1059	D240	39.916		1.56	
1065		----		----	
1082	D240	39.816879		0.87	
1108		----		----	
1121		----		----	
1126		----		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212	D240	39.892		1.39	
1218		----		----	
1259		----		----	
1264	D240	40.30	C,R(0.01)	4.25	first reported 39.092
1297		----		----	
1299		----		----	
1320	D240	39.94		1.73	
1353		----		----	
1356		----		----	
1381	D4868	39.61		-0.58	
1402	IP12	40.02		2.29	
1431	D240	39.710		0.12	
1438		----		----	
1443	BDS17413	39.70		0.05	
1585	D4868	39.602		-0.64	
1586		----		----	
1636	D4868	39.56		-0.93	
1648		----		----	
1665		42.27	R(0.01)	18.04	
1681	D4868	39.655	C	-0.27	first reported 40.548
1720		----		----	
1730		----		----	
1740	D240	39.700		0.05	
1741		----		----	
1776		----		----	
1810	D240	39.75	C	0.40	first reported 41.91
1811		39.7778		0.59	
1854	D240	39.68		-0.09	
1857	D4868	39.569		-0.87	
1862	D4868	39.590		-0.72	
1906	D4809	39.910		1.52	
1942		39.823		0.91	
1949	Calculated	39.590		-0.72	
1995	D4868	39.60		-0.65	
2129	D240	40.049		2.49	
2146		----		----	
6026	D4868	39.586		-0.75	
6075		----		----	
6092		----		----	
6112		----		----	
6114	D4868	39.59		-0.72	
6142		----		----	
6143		----		----	
6203		39.6235		-0.49	
6226	D4868	39.62		-0.51	
6238		----		----	
6266		----		----	
6319	D4868	39.59		-0.72	
6335		----		----	
6364		----		----	
6373		----		----	
6404	D240	39.628	C	-0.46	first reported 38.860
6406		----		----	
6438		39.591		-0.71	
6447		----		----	
6505		----		----	
6530		----		----	
6563	D4868	39.610		-0.58	

Determination of Heat of Combustion (Net) on sample #23275; results in MJ/kg

normality	suspect
n	58
outliers	2
mean (n)	39.6931
st.dev. (n)	0.14900
R(calc.)	0.4172
st.dev.(D240:19)	0.14286
R(D240:19)	0.4000



Determination of Hydrogen Sulfide on sample #23275; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
52	IP570-A	<0.60		----	
120		----		----	
150		----		----	
154		----		----	
159		----		----	
169		----		----	
171	IP570-A	0.00		----	
212		----		----	
223	IP570-A	0.01		----	
225		----		----	
228		----		----	
231		----		----	
235		----		----	
237		----		----	
238		----		----	
253		----		----	
256		----		----	
273		----		----	
300	IP570-A	<0.6		----	
309		----		----	
311		----		----	
313		----		----	
323	IP570-A	<0.60		----	
328		----		----	
333		----		----	
334		----		----	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360		----		----	
372	IP570-A	<0.60		----	
381		----		----	
391		----		----	
404		----		----	
445	IP570-A	<0.60		----	
447		----		----	
455		----		----	
467		----		----	
507		----		----	
541		----		----	
551		----		----	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657	IP570-A	<0.60		----	
710		----		----	
736	IP570	0.00		----	
752		----		----	
753		----		----	
778		----		----	
781	IP570-A	<0.60		----	
785		----		----	
798		----		----	
823	IP570-A	<0.60		----	
824		----		----	
825		----		----	
840	IP399	<0.5		----	
872		----		----	
873	IP399	<0.5		----	
874	IP570-A	<0.60		----	
875		----		----	
887		----		----	
904		----		----	
962	IP570-A	<0.60		----	
963	IP570-A	<0.6		----	
971	IP570-A	<0.60		----	
974		----		----	
994		----		----	
995		----		----	
996		----		----	
997		----		----	
1011		----		----	
1039		----		----	
1040		<0,1		----	

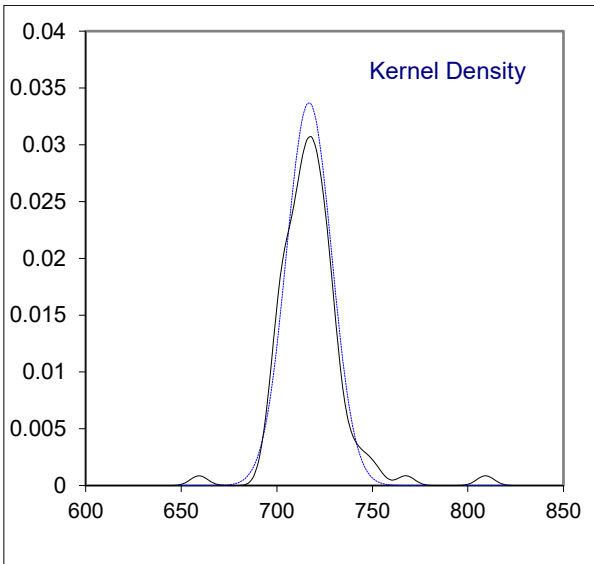
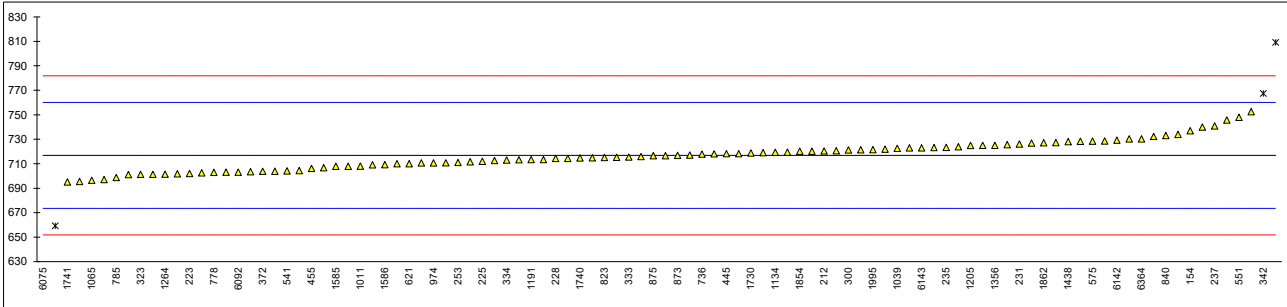
Determination of Hydrogen Sulfide on sample #23275; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108		----		----	
1121		----		----	
1126		----		----	
1134	IP570-A	0		----	
1191		----		----	
1205		----		----	
1212		----		----	
1218		----		----	
1259		----		----	
1264	IP570-A	<0.60		----	
1297		----		----	
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381	IP570-A	0.00		----	
1402		----		----	
1431		----		----	
1438		----		----	
1443		----		----	
1585	IP570-A	0.45		----	
1586	IP570-A	<0.40		----	
1636		----		----	
1648	IP570-A	<0.60		----	
1665		----		----	
1681		----		----	
1720		----		----	
1730		----		----	
1740	IP570-A	<0.60		----	
1741		----		----	
1776		----		----	
1810		----		----	
1811		----		----	
1854		----		----	
1857	IP570-B	0.50		----	
1862	IP570-B	<0.40		----	
1906		----		----	
1942		----		----	
1949		----		----	
1995		----		----	
2129	IP399	<0.5		----	
2146		----		----	
6026		----		----	
6075		----		----	
6092		----		----	
6112		----		----	
6114	IP570-A	<0.60		----	
6142	IP570-A	<0.01		----	
6143	IP570-A	0.00		----	
6203		----		----	
6226		----		----	
6238		----		----	
6266		----		----	
6319		----		----	
6335		----		----	
6364		----		----	
6373		----		----	
6404		----		----	
6406	IP570-A	<0.60		----	
6438	IP570-A	<0.6		----	
6447		----		----	
6505		----		----	
6530		----		----	
6563		----		----	
	n	33			
	mean (n)	<0.60			application range IP70-A:15R20, 0.60 – 12.5 mg/kg application range IP70-B:15R20, 0.40 – 15.3 mg/kg

Determination of Kinematic Viscosity at 50 °C on sample #23275; results in mm ² /s					
lab	method	value	mark	z(targ)	remarks
52	D445	701.1		-0.73	
120	D445	732.4		0.72	
150	ISO3104	740.0		1.07	
154	D445	737.0		0.93	
159		----		----	
169		----		----	
171		----		----	
212	ISO3104	720.41		0.16	
223	D445	702.1		-0.68	
225	D445	712.0		-0.22	
228	D445	714.32		-0.12	
231	D445	726.1	C	0.43	first reported 49.77
235	ISO3104	723.4611		0.31	
237	D445	740.9		1.11	
238		----		----	
253	D445	711.0		-0.27	
256	D445	721.4		0.21	
273	D445	710		-0.32	
300	D445	721.3		0.21	
309		----		----	
311	D445	695.5		-0.99	
313	ISO3104	703.1		-0.63	
323	D445	701.3		-0.72	
328	ISO3104	718.1		0.06	
333	ISO3104	715.5		-0.06	
334	ISO3104	713.0		-0.18	
339		----		----	
342	D445	767.5	C,R(0.01)	2.34	first reported 809.22
349		----		----	
352		----		----	
360	D445	713.26		-0.17	
372	D445	703.8		-0.60	
381		----		----	
391		----		----	
404		----		----	
445	ISO3104	718.2		0.06	
447		----		----	
455	IP71	706.2		-0.49	
467	ISO3104	702.6		-0.66	
507		----		----	
541	D445	704.2		-0.58	
551	D445	748.0		1.44	
575	D445	728.512		0.54	
621	D445	710		-0.32	
633	D445	752.6		1.65	
634	D445	809.2	R(0.01)	4.26	
657	ISO3104	709.2		-0.35	
710	ISO3104	723.31		0.30	
736	ISO3104	717.9		0.05	
752		----		----	
753	ISO3104	703.9		-0.60	
778	D445	703.0		-0.64	
781	ISO3104	711.6		-0.24	
785	ISO3104	698.8		-0.83	
798		----		----	
823	ISO3104	715.1		-0.08	
824	ISO3104	706.8		-0.46	
825	ISO3104	716.6		-0.01	
840	ISO3104	733.16		0.75	
872	ISO3104	710.6		-0.29	
873	D445	716.9		0.00	
874	ISO3104	714.4		-0.11	
875	D445	716.57		-0.01	
887		----		----	
904	ISO3104	723.1		0.29	
962	D445	704.4		-0.57	
963	ISO3104	745.8		1.34	
971	ISO3104	710.8		-0.28	
974	D445	710.6		-0.29	
994	D445	717.1		0.01	
995	ISO3104	728.7		0.55	
996	D445	721.9		0.23	
997		----		----	
1011	ISO3104	708.0		-0.41	
1039	ISO3104	722.59		0.27	
1040	ISO3104	725.1		0.38	

Determination of Kinematic Viscosity at 50 °C on sample #23275; results in mm ² /s					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065	D445	696.58		-0.94	
1082		----		----	
1108	ISO3104	725.7		0.41	
1121	ISO3104	733.95		0.79	
1126		----		----	
1134	IP71	719.36		0.12	
1191	ISO3104	713.35		-0.16	
1205	ISO3104	724.971		0.38	
1212		----		----	
1218		----		----	
1259		----		----	
1264	D445	701.48		-0.71	
1297		----		----	
1299		----		----	
1320		----		----	
1353		----		----	
1356	ISO3104	725.1		0.38	
1381	ISO3104	723.9		0.33	
1402	ISO3104	701.3		-0.72	
1431		----		----	
1438	D445	728.2	C	0.52	first reported 543.5
1443	ISO3104	718.2		0.06	
1585	D445	707.9		-0.41	
1586	ISO3104	709.3		-0.35	
1636	D445	715.23		-0.07	
1648	ISO3104	719.1		0.10	
1665	D445	659.31	R(0.01)	-2.66	
1681	ISO3104	726.88		0.46	
1720		----		----	
1730	D445	718.8		0.09	
1740	ISO3104	714.8		-0.09	
1741	ISO3104	695.2		-1.00	
1776		----		----	
1810		----		----	
1811		----		----	
1854	ISO3104	720.2		0.15	
1857	ISO3104	703.47		-0.62	
1862	D445	727.1		0.47	
1906		----		----	
1942		----		----	
1949	ISO3104	713.50		-0.15	
1995	D445	721.6		0.22	
2129	D445	701.9		-0.69	
2146		----		----	
6026	D445	707.9		-0.41	
6075	ISO3104	243.1	R(0.01)	-21.87	
6092	D445	703.1		-0.63	
6112		----		----	
6114	ISO3104	714.9		-0.09	
6142	ISO3104	729.2		0.57	
6143	D445	723.1		0.29	
6203		----		----	
6226	ISO3104	730.34		0.62	
6238		----		----	
6266	D445	727.285		0.48	
6319	D445	720.2		0.15	
6335		----		----	
6364	D445	730.37		0.62	
6373	ISO3104	697.1		-0.91	
6404	ISO3104	719.5		0.12	
6406	ISO3104	728.4		0.53	
6438	D445	720.7		0.18	
6447		----		----	
6505		----		----	
6530	D445	715.822		-0.05	
6563	D445	712.68		-0.19	

Determination of Kinematic Viscosity at 50 °C on sample #23275; results in mm²/s

normality	OK
n	98
outliers	4
mean (n)	716.8464
st.dev. (n)	11.83311
R(calc.)	33.1327
st.dev.(ISO3104:23)	21.66156
R(ISO3104:23)	60.6524

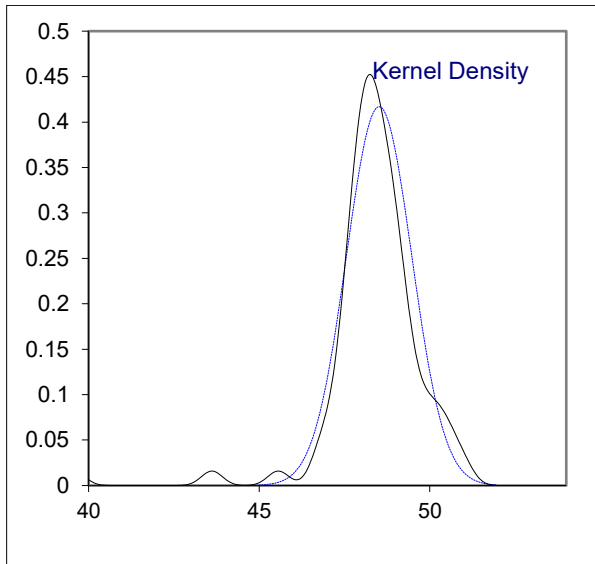
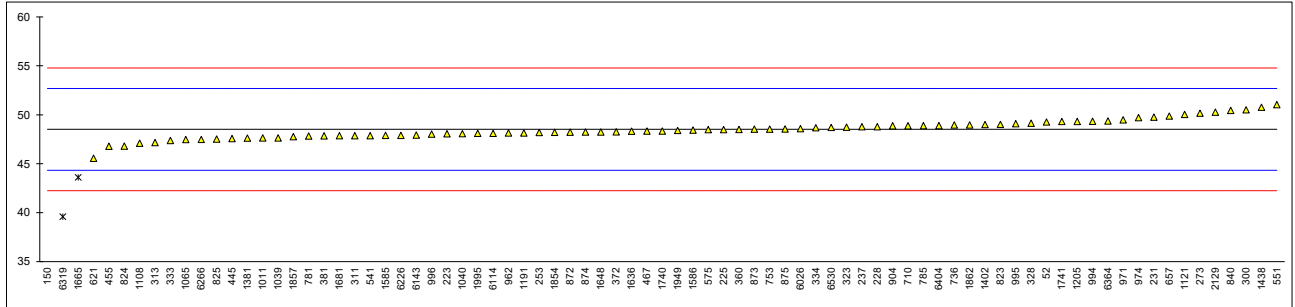


Determination of Kinematic Viscosity at 100 °C on sample #23275; results in mm ² /s					
lab	method	value	mark	z(targ)	remarks
52	D445	49.27		0.36	
120		----		----	
150	ISO3104	27.18	R(0.01)	-10.21	
154		----		----	
159		----		----	
169		----		----	
171		----		----	
212		----		----	
223	D445	48.065		-0.22	
225	D445	48.50		-0.01	
228	D445	48.78		0.13	
231	D445	49.77	C	0.60	first reported 726.1
235		----		----	
237	D445	48.78		0.13	
238		----		----	
253	D445	48.20		-0.15	
256		----		----	
273	D445	50.16		0.79	
300	D445	50.50		0.95	
309		----		----	
311	D445	47.87		-0.31	
313	ISO3104	47.16		-0.65	
323	D445	48.74		0.11	
328	ISO3104	49.15		0.30	
333	ISO3104	47.38		-0.54	
334	ISO3104	48.68		0.08	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	D445	48.504		-0.01	
372	D445	48.26		-0.12	
381	ISO3104	47.85		-0.32	
391		----		----	
404		----		----	
445	ISO3104	47.58		-0.45	
447		----		----	
455	IP71	46.78		-0.83	
467	ISO3104	48.33		-0.09	
507		----		----	
541	D445	47.87		-0.31	
551	D445	51.03		1.20	
575	D445	48.50		-0.01	
621	D445	45.56		-1.41	
633		----		----	
634		----		----	
657	ISO3104	49.87		0.65	
710	ISO3104	48.885		0.18	
736	ISO3104	48.95		0.21	
752		----		----	
753	ISO3104	48.54		0.01	
778		----		----	
781	ISO3104	47.84		-0.32	
785	ISO3104	48.90		0.18	
798		----		----	
823	D445	49.02		0.24	
824	ISO3104	46.80		-0.82	
825	ISO3104	47.53		-0.47	
840	D445	50.450		0.93	
872	ISO3104	48.23		-0.14	
873	D445	48.54		0.01	
874	ISO3104	48.24		-0.13	
875	D445	48.56		0.02	
887		----		----	
904	ISO3104	48.88		0.17	
962	D445	48.15		-0.18	
963		----		----	
971	ISO3104	49.49		0.47	
974	D445	49.72		0.58	
994	D445	49.34		0.39	
995	ISO3104	49.09		0.27	
996	D445	48.02		-0.24	
997		----		----	
1011	ISO3104	47.64		-0.42	
1039	ISO3104	47.64		-0.42	
1040	ISO3104	48.07		-0.21	

Determination of Kinematic Viscosity at 100 °C on sample #23275; results in mm ² /s					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065	D445	47.476		-0.50	
1082		----		----	
1108	ISO3104	47.1		-0.68	
1121	ISO3104	50.035		0.73	
1126		----		----	
1134		----	W	----	test result withdrawn, reported 54.68 calc. from Kin. Visc. 50 °C
1191	ISO3104	48.155		-0.17	
1205	ISO3104	49.3266		0.39	
1212		----		----	
1218		----		----	
1259		----		----	
1264		----		----	
1297		----		----	
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381	ISO3104	47.63		-0.42	
1402	ISO3104	49.01		0.24	
1431		----		----	
1438	D445	50.77		1.08	
1443		----		----	
1585	D445	47.90		-0.30	
1586	ISO3104	48.45		-0.03	
1636	D445	48.315		-0.10	
1648	ISO3104	48.25		-0.13	
1665	D445	43.615	R(0.01)	-2.35	
1681	ISO3104	47.868		-0.31	
1720		----		----	
1730		----		----	
1740	ISO3104	48.34		-0.08	
1741	ISO3104	49.31		0.38	
1776		----		----	
1810		----		----	
1811		----		----	
1854	ISO3104	48.22		-0.14	
1857	ISO3104	47.765		-0.36	
1862	D445	48.95		0.21	
1906		----		----	
1942		----		----	
1949	ISO3104	48.405		-0.05	
1995	D445	48.1		-0.20	
2129	D445	50.27		0.84	
2146		----		----	
6026	D445	48.59		0.04	
6075		----		----	
6092		----		----	
6112		----		----	
6114	ISO3104	48.10		-0.20	
6142		----		----	
6143	D445	47.93		-0.28	
6203		----		----	
6226	ISO3104	47.91		-0.29	
6238		----		----	
6266	D445	47.49		-0.49	
6319	D445	39.59	R(0.01)	-4.27	
6335		----		----	
6364	D445	49.37		0.41	
6373		----		----	
6404	ISO3104	48.9		0.18	
6406		----		----	
6438		----		----	
6447		----		----	
6505		----		----	
6530	D445	48.708		0.09	
6563		----		----	

Determination of Kinematic Viscosity at 100 °C on sample #23275; results in mm²/s

normality	OK
n	78
outliers	3
mean (n)	48.5168
st.dev. (n)	0.95666
R(calc.)	2.6786
st.dev.(ISO3104:23)	2.08969
R(ISO3104:23)	5.8511

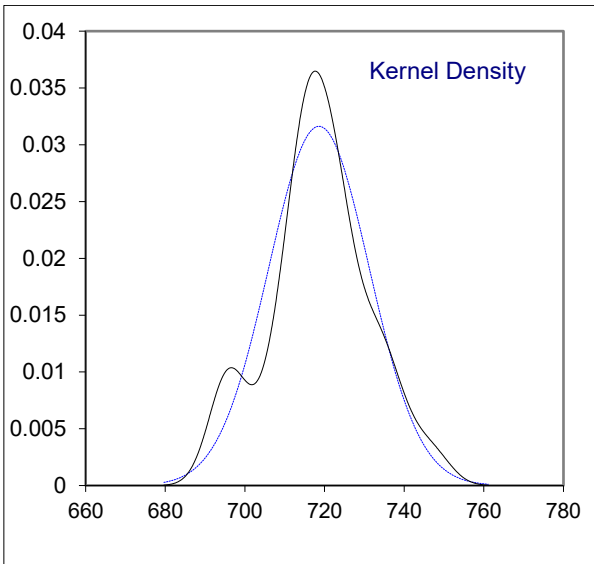
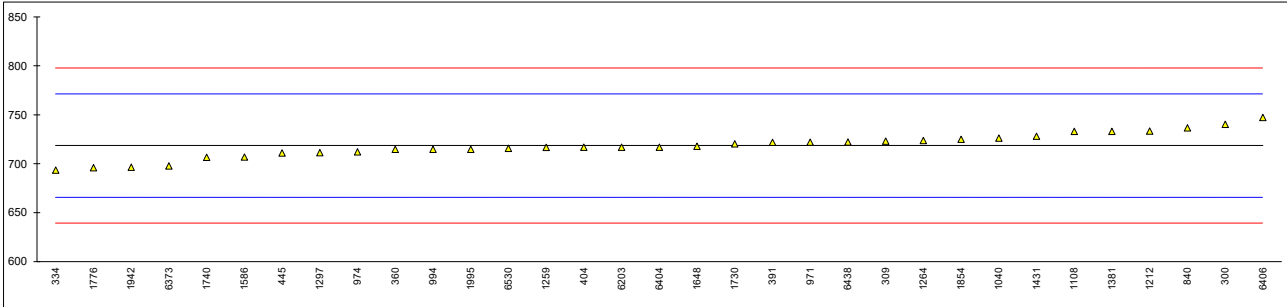


Determination of Kinematic Viscosity Stabinger at 50 °C on sample #23275; results in mm ² /s					
lab	method	value	mark	z(targ)	remarks
52		----		----	
120		----		----	
150		----		----	
154		----		----	
159		----		----	
169		----		----	
171		----		----	
212		----		----	
223		----		----	
225		----		----	
228		----		----	
231		----		----	
235		----		----	
237		----		----	
238		----		----	
253		----		----	
256		----		----	
273		----		----	
300	D7042	740.3		0.82	
309	D7042	723.13		0.17	
311		----		----	
313		----		----	
323		----		----	
328		----		----	
333		----		----	
334	D7042	693.5		-0.95	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	D7042	714.70		-0.15	
372		----		----	
381		----		----	
391	D7042	721.9		0.13	
404	D7042	716.87		-0.07	
445	D7042	711.0		-0.29	
447		----		----	
455		----		----	
467		----		----	
507		----		----	
541		----		----	
551		----		----	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657		----		----	
710		----		----	
736		----		----	
752		----		----	
753		----		----	
778		----		----	
781		----		----	
785		----		----	
798		----		----	
823		----		----	
824		----		----	
825		----		----	
840	D7042	736.60		0.68	
872		----		----	
873		----		----	
874		----		----	
875		----		----	
887		----		----	
904		----		----	
962		----		----	
963		----		----	
971	D7042	722.0		0.13	
974	D7042	712.2		-0.24	
994	D7042	714.8		-0.14	
995		----		----	
996		----		----	
997		----		----	
1011		----		----	
1039		----		----	
1040	D7042	726.2		0.29	

Determination of Kinematic Viscosity Stabinger at 50 °C on sample #23275; results in mm²/s					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108	D7042	733.0		0.55	
1121		----		----	
1126		----		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212	D7042	733.4		0.56	
1218		----		----	
1259	D7042	716.8		-0.07	
1264	D7042	723.7		0.19	
1297	D7042	711.40		-0.27	
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381	D7042	733.03		0.55	
1402		----		----	
1431	D7042	728.16		0.36	
1438		----		----	
1443		----		----	
1585		----		----	
1586	D7042	706.9		-0.44	
1636		----		----	
1648	D7042	717.9		-0.03	
1665		----		----	
1681		----		----	
1720		----		----	
1730	D7042	720.4		0.07	
1740	D7042	706.6		-0.45	
1741		----		----	
1776	D7042	695.95		-0.86	
1810		----		----	
1811		----		----	
1854	D7042	725.0		0.24	
1857		----		----	
1862		----		----	
1906		----		----	
1942	D7042	696.53		-0.84	
1949		----		----	
1995	D7042	714.8		-0.14	
2129		----		----	
2146		----		----	
6026		----		----	
6075		----		----	
6092		----		----	
6112		----		----	
6114		----		----	
6142		----		----	
6143		----		----	
6203	D7042	716.97		-0.06	
6226		----		----	
6238		----		----	
6266		----		----	
6319		----		----	
6335		----		----	
6364		----		----	
6373	D7042	697.735		-0.79	
6404	D7042	717.0		-0.06	
6406	D7042	747.29		1.09	
6438	D7042	722.2		0.14	
6447		----		----	
6505		----		----	
6530	D7042	715.70		-0.11	
6563		----		----	

Determination of Kinematic Viscosity Stabinger at 50 °C on sample #23275; results in mm²/s

normality	OK
n	33
outliers	0
mean (n)	718.5959
st.dev. (n)	12.61110
R(calc.)	35.3111
st.dev.(D7042:21a)	26.40840
R(D7042:21a)	73.9435

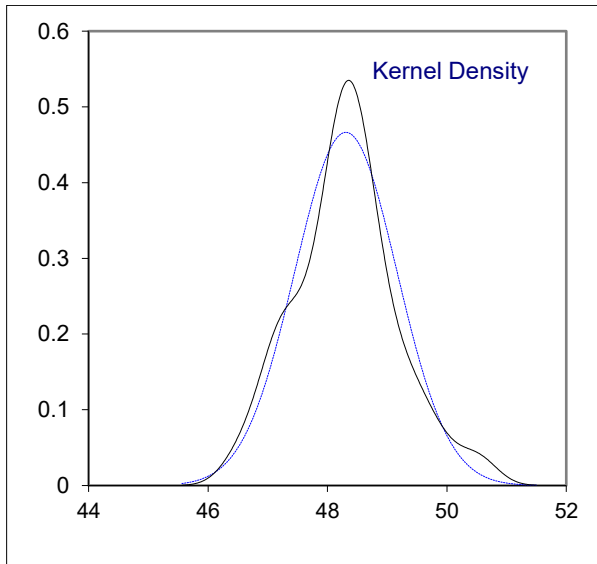
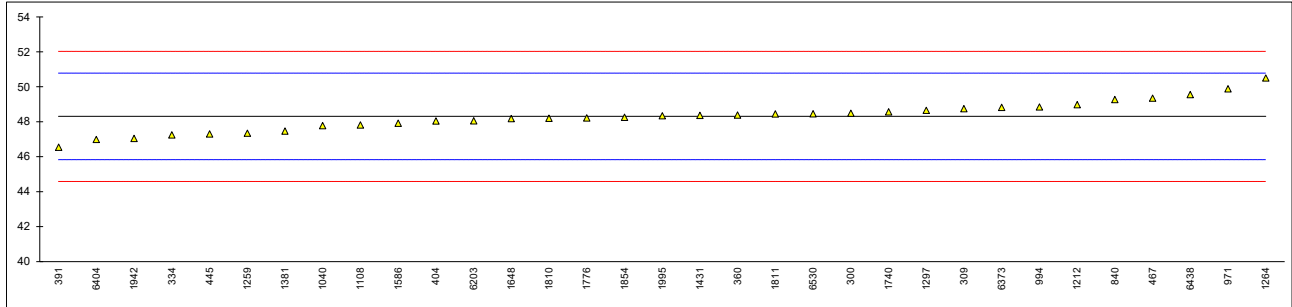


Determination of Kinematic Viscosity Stabinger at 100 °C on sample #23275; results in mm²/s					
lab	method	value	mark	z(targ)	remarks
52		----		----	
120		----		----	
150		----		----	
154		----		----	
159		----		----	
169		----		----	
171		----		----	
212		----		----	
223		----		----	
225		----		----	
228		----		----	
231		----		----	
235		----		----	
237		----		----	
238		----		----	
253		----		----	
256		----		----	
273		----		----	
300	D7042	48.49		0.15	
309	D7042	48.75		0.36	
311		----		----	
313		----		----	
323		----		----	
328		----		----	
333		----		----	
334	D7042	47.25		-0.85	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	D7042	48.391		0.07	
372		----		----	
381		----		----	
391	D7042	46.55		-1.42	
404	D7042	48.052		-0.21	
445	D7042	47.30		-0.81	
447		----		----	
455		----		----	
467	D7042	49.35		0.84	
507		----		----	
541		----		----	
551		----		----	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657		----		----	
710		----		----	
736		----		----	
752		----		----	
753		----		----	
778		----		----	
781		----		----	
785		----		----	
798		----		----	
823		----		----	
824		----		----	
825		----		----	
840	D7042	49.273		0.78	
872		----		----	
873		----		----	
874		----		----	
875		----		----	
887		----		----	
904		----		----	
962		----		----	
963		----		----	
971	D7042	49.89		1.28	
974		----		----	
994	D7042	48.85		0.44	
995		----		----	
996		----		----	
997		----		----	
1011		----		----	
1039		----		----	
1040	D7042	47.78		-0.43	

Determination of Kinematic Viscosity Stabinger at 100 °C on sample #23275; results in mm ² /s					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108	D7042	47.82		-0.39	
1121		----		----	
1126		----		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212	D7042	48.98		0.54	
1218		----		----	
1259	D7042	47.35		-0.77	
1264	D7042	50.51	C	1.78	first reported 52.708
1297	D7042	48.662		0.28	
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381	D7042	47.467		-0.68	
1402		----		----	
1431	D7042	48.370		0.05	
1438		----		----	
1443		----		----	
1585		----		----	
1586	D7042	47.92		-0.31	
1636		----		----	
1648	D7042	48.19		-0.10	
1665		----		----	
1681		----		----	
1720		----		----	
1730		----		----	
1740	D7042	48.57		0.21	
1741		----		----	
1776	D7042	48.22		-0.07	
1810	D7042	48.204		-0.08	
1811	D7042	48.452		0.12	
1854	D7042	48.26		-0.04	
1857		----		----	
1862		----		----	
1906		----		----	
1942	D7042	47.05		-1.02	
1949		----		----	
1995	D7042	48.35		0.03	
2129		----		----	
2146		----		----	
6026		----		----	
6075		----		----	
6092		----		----	
6112		----		----	
6114		----		----	
6142		----		----	
6143		----		----	
6203	D7042	48.057		-0.20	
6226		----		----	
6238		----		----	
6266		----		----	
6319		----		----	
6335		----		----	
6364		----		----	
6373	D7042	48.8230		0.41	
6404	D7042	46.99		-1.06	
6406		----		----	
6438	D7042	49.56		1.01	
6447		----		----	
6505		----		----	
6530	D7042	48.460		0.12	
6563		----		----	

Determination of Kinematic Viscosity Stabinger at 100 °C on sample #23275; results in mm²/s

normality	OK
n	33
outliers	0
mean (n)	48.3088
st.dev. (n)	0.85562
R(calc.)	2.3957
st.dev.(D7042:21a)	1.23981
R(D7042:21a)	3.4715

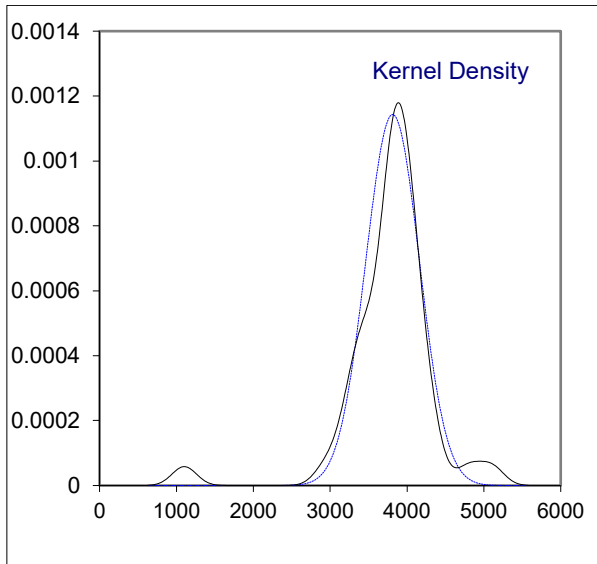
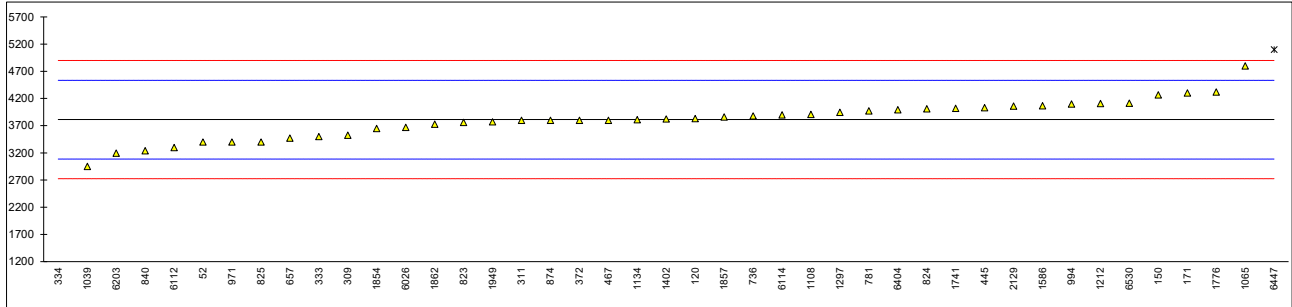


Determination of Nitrogen on sample #23275; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
52	D4629	3400		-1.14	
120	D4629	3831.98		0.06	
150	D5762	4267		1.26	
154		----		----	
159		----		----	
169		----		----	
171	D5762 Gravimetric	4300		1.35	
212		----		----	
223		----		----	
225		----		----	
228		----		----	
231		----		----	
235		----		----	
237		----		----	
238		----		----	
253		----		----	
256		----		----	
273		----		----	
300		----		----	
309	D5762 Gravimetric	3526		-0.79	
311	D5762 Volumetric	3800		-0.03	
313		----		----	
323		----		----	
328		----		----	
333	D5762 Gravimetric	3500		-0.86	
334	D4629	1100	R(0.01)	-7.49	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360		----		----	
372	D5762 Volumetric	3800		-0.03	
381		----		----	
391		----		----	
404		----		----	
445	D5762 Gravimetric	4030		0.60	
447		----		----	
455		----		----	
467	D5762 Gravimetric	3800		-0.03	
507		----		----	
541		----		----	
551		----		----	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657	D5762 Gravimetric	3473		-0.94	
710		----		----	
736	D5762 Volumetric	3880		0.19	
752		----		----	
753		----		----	
778		----		----	
781	D5762 Gravimetric	3973		0.45	
785		----		----	
798		----		----	
823	D5762 Gravimetric	3760		-0.14	
824	D5762 Gravimetric	4011		0.55	
825	D5762 Gravimetric	3400		-1.14	
840	D4629	3240		-1.58	
872		----		----	
873		----		----	
874	D5762	3800		-0.03	
875		----		----	
887		----		----	
904		----		----	
962		----		----	
963		----		----	
971	D5762 Gravimetric	3400	C	-1.14	first reported 2400
974		----		----	
994	D5762 Volumetric	4099		0.79	
995		----		----	
996		----		----	
997		----		----	
1011		----		----	
1039	D4629	2952		-2.37	
1040		----		----	

Determination of Nitrogen on sample #23275; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065	D4629	4800		2.73	
1082		----		----	
1108	D5762 Gravimetric	3909		0.27	
1121		----		----	
1126		----		----	
1134	D5762 Gravimetric	3809.150		-0.01	
1191		----		----	
1205		----		----	
1212	D5762 Volumetric	4108		0.82	
1218		----		----	
1259		----		----	
1264		----		----	
1297	D4629	3946		0.37	
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381		----		----	
1402	D5762 Volumetric	3823		0.03	
1431		----		----	
1438		----		----	
1443		----		----	
1585		----		----	
1586	D5762 Volumetric	4067		0.70	
1636		----		----	
1648		----		----	
1665		----		----	
1681		----		----	
1720		----		----	
1730		----		----	
1740		----		----	
1741	D5762 Gravimetric	4019		0.57	
1776	D5762 Volumetric	4320		1.40	
1810		----		----	
1811		----		----	
1854	D4629	3649		-0.45	
1857	D5762 Gravimetric	3860		0.13	
1862	D5762 Gravimetric	3730		-0.23	
1906		----		----	
1942		----		----	
1949	D5762 Volumetric	3770		-0.12	
1995		----		----	
2129	D3228	4060		0.69	
2146		----		----	
6026	D5762 Gravimetric	3670		-0.39	
6075		----		----	
6092		----		----	
6112	D4629	3300		-1.41	
6114	D5762 Volumetric	3900		0.24	
6142		----		----	
6143		----		----	
6203	D5762 Gravimetric	3195		-1.70	
6226		----		----	
6238		----		----	
6266		----		----	
6319		----		----	
6335		----		----	
6364		----		----	
6373		----		----	
6404	D5762 Gravimetric	3994		0.50	
6406		----		----	
6438		----		----	
6447	D5762 Gravimetric	5100	R(0.05)	3.56	
6505		----		----	
6530	D5762 Volumetric	4113		0.83	
6563		----		----	

Determination of Nitrogen on sample #23275; results in mg/kg

normality	OK
n	41
outliers	2
mean (n)	3811.83
st.dev. (n)	348.91
R(calc.)	976.94
st.dev.(D5762:18a)	362.12
R(D5762:18a)	1013.95

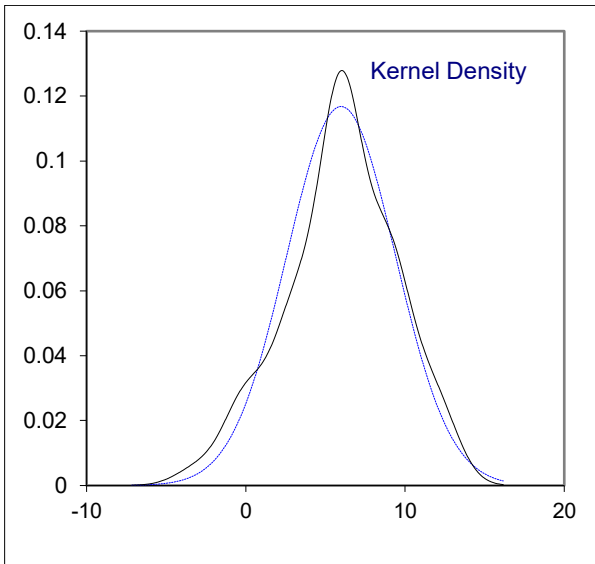
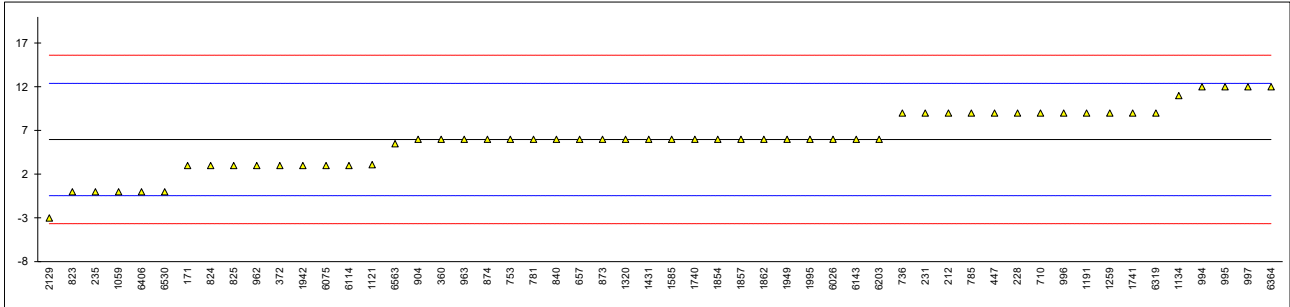


Determination of Pour Point Lower on sample #23275; results in °C					
lab	method	value	mark	z(targ)	remarks
52		----		----	
120		----		----	
150		----		----	
154		----		----	
159		----		----	
169		----		----	
171	ISO3016	3		-0.93	
212	ISO3016	9		0.94	
223		----		----	
225		----		----	
228	D97	9		0.94	
231	D97	9		0.94	
235	ISO3016	0		-1.86	
237		----		----	
238		----		----	
253		----		----	
256		----		----	
273		----		----	
300		----		----	
309		----		----	
311		----		----	
313		----		----	
323		----		----	
328		----		----	
333		----		----	
334		----		----	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	D97	6		0.01	
372	ISO3016	3		-0.93	
381		----		----	
391		----		----	
404		----		----	
445		----		----	
447	IP15	9		0.94	
455		----		----	
467		----		----	
507		----		----	
541		----		----	
551		----		----	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657	ISO3016	6		0.01	
710	D97	9		0.94	
736	ISO3016	9		0.94	
752		----		----	
753	ISO3016	6		0.01	
778		----		----	
781	ISO3016	6		0.01	
785	ISO3016	9.0		0.94	
798		----		----	
823	ISO3016	0		-1.86	
824	ISO3016	3		-0.93	
825	ISO3016	3		-0.93	
840	ISO3016	6		0.01	
872		----		----	
873	D97	6		0.01	
874	ISO3016	6		0.01	
875		----		----	
887		----		----	
904	ISO3016	6		0.01	
962	D97	3		-0.93	
963	D97	6		0.01	
971		----		----	
974		----		----	
994	D97	12		1.87	
995	ISO3016	12		1.87	
996	D97	9		0.94	
997	ISO3016	12		1.87	
1011		----		----	
1039		----		----	
1040		----		----	

Determination of Pour Point Lower on sample #23275; results in °C					
lab	method	value	mark	z(targ)	remarks
1059	ISO3016	0		-1.86	
1065		----		----	
1082		----		----	
1108		----		----	
1121	ISO3016	3.1		-0.89	
1126		----		----	
1134	ISO3016	11		1.56	
1191	ISO3016	9		0.94	
1205		----		----	
1212		----		----	
1218		----		----	
1259	ISO3016	9		0.94	
1264		----		----	
1297		----		----	
1299		----		----	
1320	ISO3016	6		0.01	
1353		----		----	
1356		----		----	
1381		----		----	
1402		----		----	
1431	D97	6.0		0.01	
1438		----		----	
1443		----		----	
1585	D97	6		0.01	
1586		----		----	
1636		----		----	
1648		----		----	
1665		----		----	
1681		----		----	
1720		----		----	
1730		----		----	
1740	D97	6		0.01	
1741	ISO3016	9		0.94	
1776		----		----	
1810		----		----	
1811		----		----	
1854	ISO3016	6		0.01	
1857	ISO3016	6		0.01	
1862	D97	6		0.01	
1906		----		----	
1942	D97	3		-0.93	
1949	ISO3016	6		0.01	
1995	D97	6		0.01	
2129	ISO3016	-3.0		-2.79	
2146		----		----	
6026	D97	6		0.01	
6075		3		-0.93	
6092		----		----	
6112		----		----	
6114	ISO3016	3		-0.93	
6142		----		----	
6143	D97	6		0.01	
6203	D97	6		0.01	
6226		----		----	
6238		----		----	
6266		----		----	
6319	D97	9		0.94	
6335		----		----	
6364	D97	12		1.87	
6373		----		----	
6404		----		----	
6406	ISO3016	0		-1.86	
6438		----		----	
6447		----		----	
6505		----		----	
6530	D97	0	C	-1.86	first reported -9
6563	D97	5.5		-0.15	

Determination of Pour Point Lower on sample #23275; results in °C

normality	OK
n	54
outliers	0
mean (n)	5.97
st.dev. (n)	3.42
R(calc.)	9.57
st.dev.(ISO3016:19)	3.21
R(ISO3016:19)	9

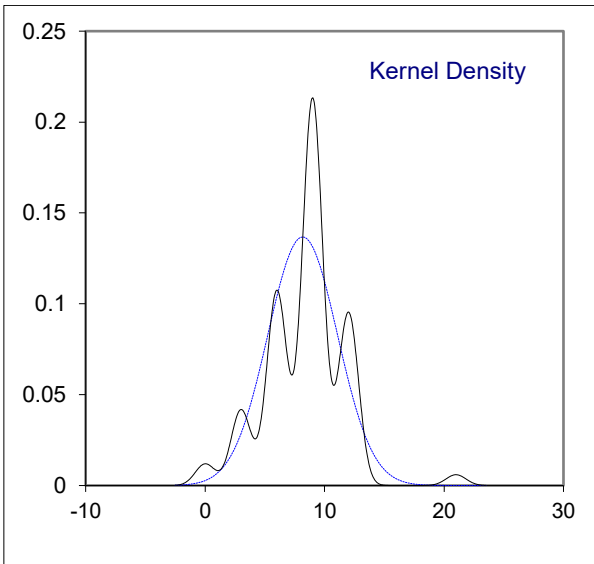
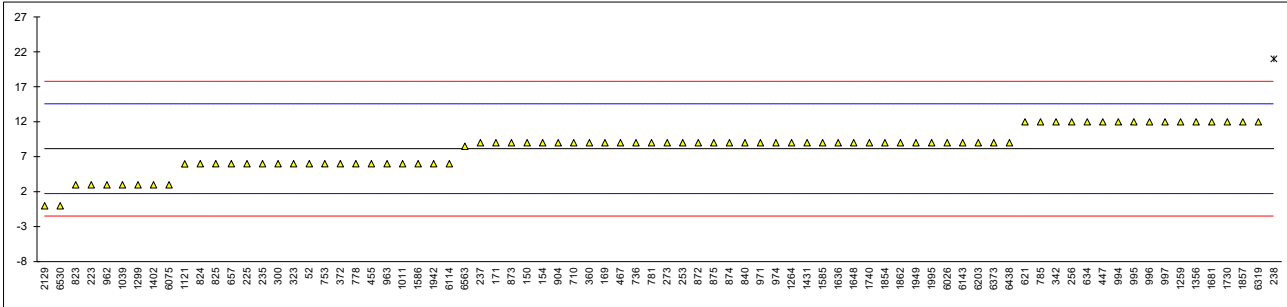


Determination of Pour Point Upper on sample #23275; results in °C						
lab	method	value	mark	z(targ)	remarks	
52	D97	6	C	-0.67	first reported 0	
120		----				
150	ISO3016	9		0.26		
154	D97	9		0.26		
159		----				
169	D97	9		0.26		
171	ISO3016	9		0.26		
212		----				
223	D97	3		-1.60		
225	D97	6		-0.67		
228		----				
231		----				
235	ISO3016	6		-0.67		
237	D97	9		0.26		
238	D97	21	C,R(0.01)	4.00	first reported 18	
253	D97	9		0.26		
256	D97	12		1.20		
273	D97	9		0.26		
300	D97	6		-0.67		
309		----				
311		----				
313		----				
323	ISO3016	6		-0.67		
328		----				
333		----				
334		----				
339		----				
342	D97	12		1.20		
349		----				
352		----				
360	D97	9		0.26		
372	ISO3016	6		-0.67		
381		----				
391		----				
404		----				
445		----				
447	IP15	12		1.20		
455	D97	6		-0.67		
467	ISO3016	9		0.26		
507		----				
541		----				
551		----				
575		----				
621	D97	12		1.20		
633		----				
634	D97	12		1.20		
657	ISO3016	6		-0.67		
710	D97	9		0.26		
736	ISO3016	9		0.26		
752		----				
753	ISO3016	6		-0.67		
778	D97	6		-0.67		
781	ISO3016	9		0.26		
785	ISO3016	12.0		1.20		
798		----				
823	ISO3016	3		-1.60		
824	ISO3016	6		-0.67		
825	ISO3016	6		-0.67		
840	ISO3016	9		0.26		
872	D97	9		0.26		
873	D97	9		0.26		
874	ISO3016	9		0.26		
875	D97	9		0.26		
887		----				
904	ISO3016	9		0.26		
962	D97	3		-1.60		
963	D97	6		-0.67		
971	ISO3016	9		0.26		
974	D97	9		0.26		
994	D97	12		1.20		
995	ISO3016	12		1.20		
996	D97	12		1.20		
997	ISO3016	12		1.20		
1011	ISO3016	6		-0.67		
1039	ISO3016	3.0		-1.60		
1040		----				

Determination of Pour Point Upper on sample #23275; results in °C					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108		----		----	
1121	ISO3016	5.98		-0.68	
1126		----		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212		----		----	
1218		----		----	
1259	ISO3016	12		1.20	
1264	D97	9		0.26	
1297		----		----	
1299	D97	3		-1.60	
1320		----		----	
1353		----		----	
1356	ISO3016	12		1.20	
1381		----		----	
1402	ISO3016	3		-1.60	
1431	D97	9.0		0.26	
1438		----		----	
1443		----		----	
1585	D97	9		0.26	
1586	ISO3016	6		-0.67	
1636	D97	9		0.26	
1648	ISO3016	9		0.26	
1665		----		----	
1681	ISO3016	12		1.20	
1720		----		----	
1730	D97	12		1.20	
1740	D97	9		0.26	
1741		----		----	
1776		----		----	
1810		----		----	
1811		----		----	
1854	ISO3016	9		0.26	
1857	ISO3016	12		1.20	
1862	D97	9		0.26	
1906		----		----	
1942	D97	6		-0.67	
1949	ISO3016	9		0.26	
1995	D97	9		0.26	
2129	ISO3016	0.0		-2.54	
2146		----		----	
6026	D97	9		0.26	
6075		3		-1.60	
6092		----		----	
6112		----		----	
6114	ISO3016	6		-0.67	
6142		----		----	
6143	D97	9		0.26	
6203	D97	9		0.26	
6226		----		----	
6238		----		----	
6266		----		----	
6319	D97	12		1.20	
6335		----		----	
6364		----		----	
6373	ISO3016	9		0.26	
6404		----		----	
6406		----		----	
6438	D97	9		0.26	
6447		----		----	
6505		----		----	
6530	D97	0	C	-2.54	first reported -6
6563	D97	8.5		0.11	

Determination of Pour Point Upper on sample #23275; results in °C

normality	OK
n	79
outliers	1
mean (n)	8.16
st.dev. (n)	2.92
R(calc.)	8.17
st.dev.(ISO3016:19)	3.21
R(ISO3016:19)	9

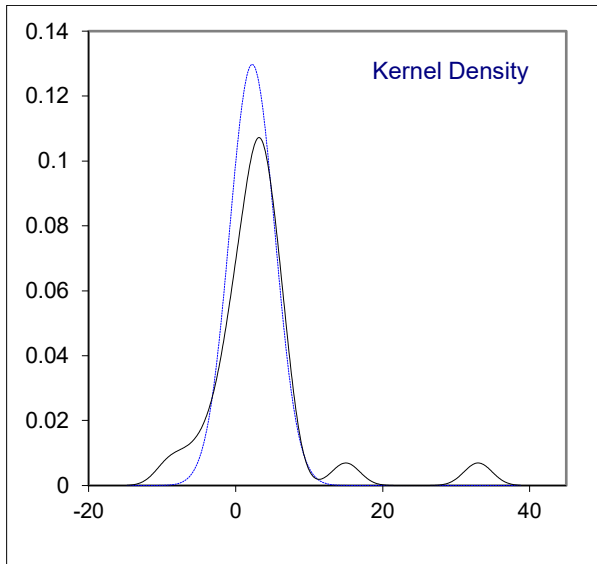
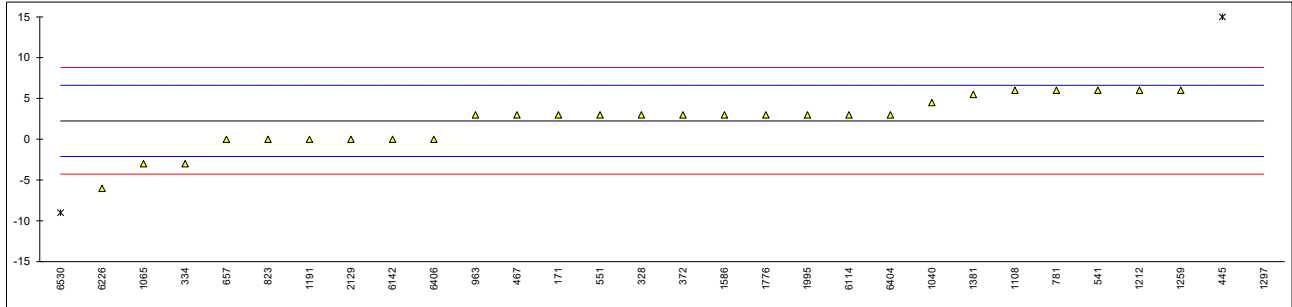


Determination of Pour Point Automated 3 °C interval on sample #23275; results in °C					
lab	method	value	mark	z(targ)	remarks
52		----		----	
120		----		----	
150		----		----	
154		----		----	
159		----		----	
169		----		----	
171	D5950	3		0.34	
212		----		----	
223		----		----	
225		----		----	
228		----		----	
231		----		----	
235		----		----	
237		----		----	
238		----		----	
253		----		----	
256		----		----	
273		----		----	
300		----		----	
309		----		----	
311		----		----	
313		----		----	
323		----		----	
328	D5950	3		0.34	
333		----		----	
334	D5950	-3		-2.41	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360		----		----	
372	D5950	3		0.34	
381		----		----	
391		----		----	
404		----		----	
445	IP15	15	R(0.05)	5.85	
447		----		----	
455		----		----	
467	D6892	3		0.34	
507		----		----	
541	D5950	6		1.72	
551	D5950	3.0		0.34	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657	D5950	0		-1.04	
710		----		----	
736		----		----	
752		----		----	
753		----		----	
778		----		----	
781	D5950	6		1.72	
785		----		----	
798		----		----	
823	D5950	0		-1.04	
824		----		----	
825		----		----	
840		----		----	
872		----		----	
873		----		----	
874		----		----	
875		----		----	
887		----		----	
904		----		----	
962		----		----	
963	D5950	3		0.34	
971		----		----	
974		----		----	
994		----		----	
995		----		----	
996		----		----	
997		----		----	
1011		----		----	
1039		----		----	
1040	D5950	4.5		1.03	

Determination of Pour Point Automated 3 °C interval on sample #23275; results in °C					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065	D5950	-3		-2.41	
1082		----		----	
1108	D5950	6		1.72	
1121		----		----	
1126		----		----	
1134		----		----	
1191	D5950	0		-1.04	
1205		----		----	
1212	D6892	6		1.72	
1218		----		----	
1259	D5950	6		1.72	
1264		----		----	
1297	D5950	33	C,R(0.01)	14.11	first reported 33.75
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381	D6749	5.5		1.49	
1402		----		----	
1431		----		----	
1438		----		----	
1443		----		----	
1585		----		----	
1586	D5950	3		0.34	
1636		----		----	
1648		----		----	
1665		----		----	
1681		----		----	
1720		----		----	
1730		----		----	
1740		----		----	
1741		----		----	
1776	D5950	3.0		0.34	
1810		----		----	
1811		----		----	
1854		----		----	
1857		----		----	
1862		----		----	
1906		----		----	
1942		----		----	
1949		----		----	
1995	D5950	3		0.34	
2129	D5950	0.0		-1.04	
2146		----		----	
6026		----		----	
6075		----		----	
6092		----		----	
6112		----		----	
6114	D5950	3		0.34	
6142	D5950	0		-1.04	
6143		----		----	
6203		----		----	
6226	D5950	-6		-3.79	
6238		----		----	
6266		----		----	
6319		----		----	
6335		----		----	
6364		----		----	
6373		----		----	
6404	ISO3016	3		0.34	
6406	D5950	0		-1.04	
6438		----		----	
6447		----		----	
6505		----		----	
6530	D5950	-9	R(0.05)	-5.17	
6563		----		----	

Determination of Pour Point Automated 3 °C interval on sample #23275; results in °C

normality	OK
n	27
outliers	3
mean (n)	2.26
st.dev. (n)	3.07
R(calc.)	8.61
st.dev.(D5950:14R20)	2.18
R(D5950:14R20)	6.1

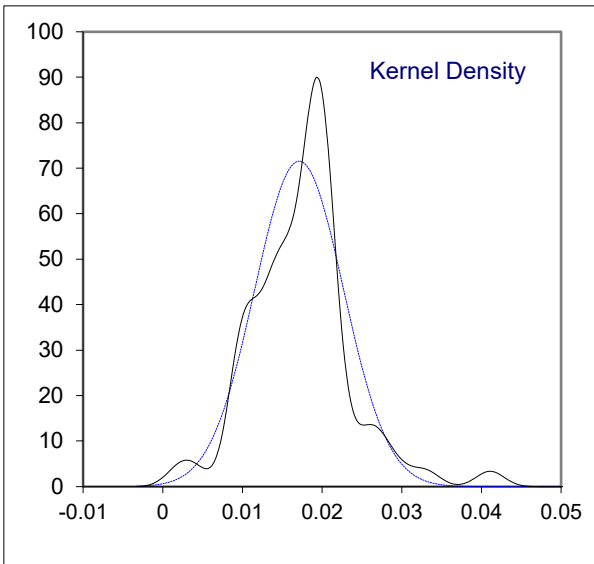
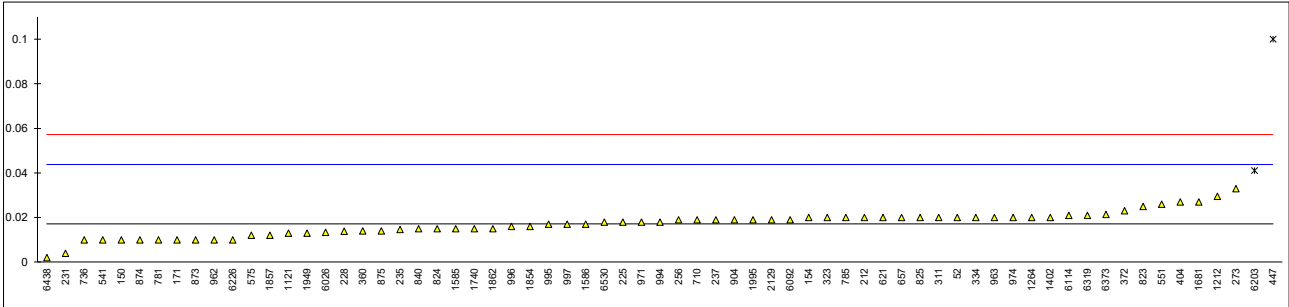


Determination of Sediment by Extraction on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
52	D473	0.02		0.22	
120		----		----	
150	D473	0.01		-0.53	
154	D473	0.02		0.22	
159		----		----	
169		----		----	
171	D473	0.01		-0.53	
212	D473	0.02		0.22	
223		----		----	
225	D473	0.018		0.07	
228	D473	0.0139		-0.24	
231	D473	0.00393		-0.99	
235	D473	0.0146		-0.19	
237	D473	0.019		0.14	
238		----		----	
253		----		----	
256	D473	0.019		0.14	
273	D473	0.033		1.19	
300		----		----	
309		----		----	
311	D473	0.02		0.22	
313		----		----	
323	D473	0.02		0.22	
328		----		----	
333		----		----	
334	D473	0.02		0.22	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	ISO3735	0.014		-0.23	
372	D473	0.023		0.44	
381		----		----	
391		----		----	
404	D473	0.027		0.74	
445		----		----	
447	D473	0.10	R(0.01)	6.21	
455		----		----	
467		----		----	
507		----		----	
541	D473	0.01		-0.53	
551	D473	0.026		0.67	
575	D473	0.012		-0.38	
621	D473	0.02		0.22	
633		----		----	
634		----		----	
657	D473	0.02		0.22	
710	D473	0.019		0.14	
736	D473	0.01		-0.53	
752		----		----	
753		----		----	
778		----		----	
781	D473	0.01		-0.53	
785	D473	0.02		0.22	
798		----		----	
823	D473	0.025		0.59	
824	D473	0.015		-0.16	
825	D473	0.02		0.22	
840	D473	0.015		-0.16	
872		----		----	
873	D473	0.01		-0.53	
874	D473	0.01		-0.53	
875	D473	0.014		-0.23	
887		----		----	
904	D473	0.019		0.14	
962	D473	0.01		-0.53	
963	D473	0.02		0.22	
971	D473	0.018		0.07	
974	D473	0.02		0.22	
994	D473	0.018		0.07	
995	D473	0.017		-0.01	
996	D473	0.016		-0.08	
997	D473	0.017		-0.01	
1011		----		----	
1039		----		----	
1040		----		----	

Determination of Sediment by Extraction on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108		----		----	
1121	D473	0.013		-0.31	
1126		----		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212	D473	0.0295		0.93	
1218		----		----	
1259		----		----	
1264	D473	0.02	C	0.22	first reported 0.056
1297		----		----	
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381		----		----	
1402	IP53	0.02		0.22	
1431		----		----	
1438		----		----	
1443		----		----	
1585	D473	0.015		-0.16	
1586	ISO3735	0.017		-0.01	
1636		----		----	
1648		----		----	
1665		----		----	
1681	D473	0.027		0.74	
1720		----		----	
1730		----		----	
1740	ISO3735	0.015		-0.16	
1741		----		----	
1776		----		----	
1810		----		----	
1811		----		----	
1854	D473	0.016		-0.08	
1857	D473	0.012		-0.38	
1862	D473	0.015		-0.16	
1906		----		----	
1942		----		----	
1949	D473	0.013		-0.31	
1995	D473	0.019		0.14	
2129	D473	0.019		0.14	
2146		----		----	
6026	ISO3735	0.0133		-0.29	
6075		----		----	
6092	ISO3735	0.019		0.14	
6112		----		----	
6114	D473	0.021		0.29	
6142		----		----	
6143		----		----	
6203	D473	0.0411	R(0.01)	1.80	
6226	D473	0.01		-0.53	
6238		----		----	
6266		----		----	
6319	D473	0.021		0.29	
6335		----		----	
6364		----		----	
6373	D473	0.0214		0.32	
6404		----		----	
6406		----		----	
6438	D473	0.002		-1.13	
6447		----		----	
6505		----		----	
6530	D473	0.01796		0.06	
6563		----		----	

Determination of Sediment by Extraction on sample #23275; results in %M/M

normality	OK
n	65
outliers	2
mean (n)	0.0171
st.dev. (n)	0.00558
R(calc.)	0.0156
st.dev.(D473:22)	0.01334
R(D473:22)	0.0374

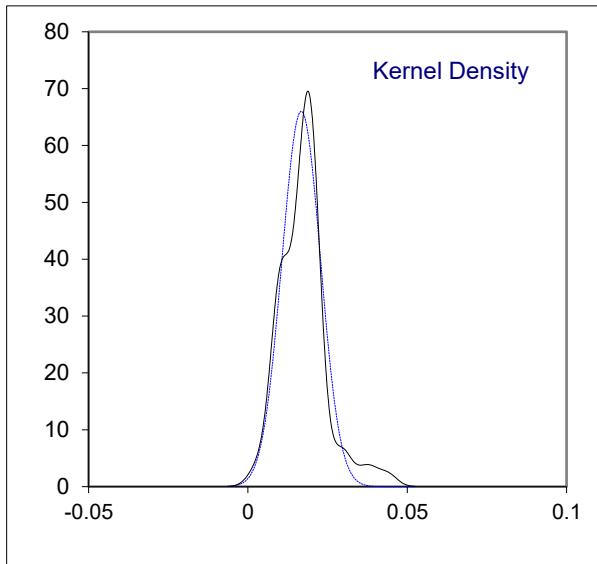
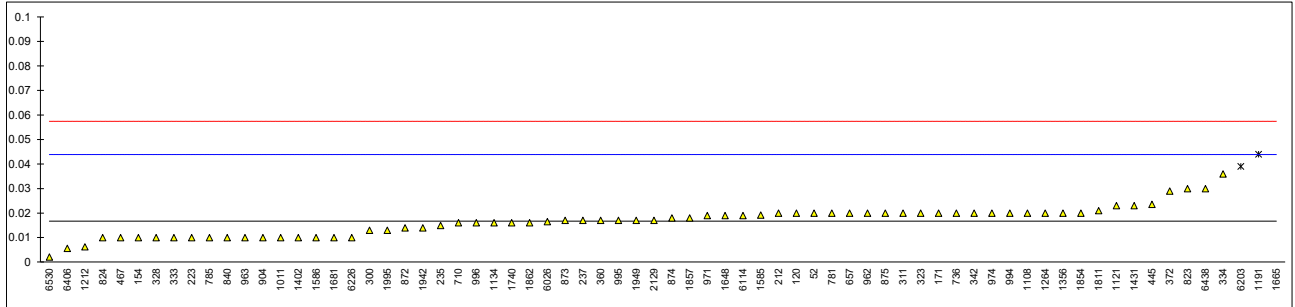


Determination of Total Sediment Existent (TSE) of sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
52	D4870	0.02		0.24	
120	D4870	0.02		0.24	
150		----		----	
154	D4870	0.01		-0.49	
159		----		----	
169		----		----	
171	IP375	0.02		0.24	
212	ISO10307-1	0.02		0.24	
223	IP375	0.01		-0.49	
225		----		----	
228		----		----	
231		----		----	
235	ISO10307-1	0.015		-0.13	
237	D4870	0.017		0.02	
238		----		----	
253		----		----	
256		----		----	
273		----		----	
300	ISO10307-1	0.013		-0.27	
309		----		----	
311	ISO10307-1	0.02		0.24	
313		----		----	
323	ISO10307-1	0.02		0.24	
328	IP375	0.01		-0.49	
333	ISO10307-1	0.01		-0.49	
334	IP375	0.036		1.42	
339		----		----	
342	ISO10307-1	0.02		0.24	
349		----		----	
352		----		----	
360	ISO10307-1	0.017		0.02	
372	IP375	0.029		0.91	
381		----		----	
391		----		----	
404		----		----	
445	IP375	0.0236		0.51	
447		----		----	
455		----		----	
467	ISO10307-1	0.01		-0.49	
507		----		----	
541	D4870	<0.01		----	
551		----		----	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657	IP375	0.02		0.24	
710	D4870	0.016		-0.05	
736	IP375	0.02		0.24	
752		----		----	
753		----		----	
778		----		----	
781	IP375	0.02		0.24	
785	IP375	0.01		-0.49	
798		----		----	
823	ISO10307-1	0.03		0.98	
824	ISO10307-1	0.01		-0.49	
825		----		----	
840	ISO10307-1	0.010		-0.49	
872	ISO10307-1	0.014		-0.20	
873	IP375	0.017		0.02	
874	IP375	0.018		0.10	
875	IP375	0.02		0.24	
887		----		----	
904	ISO10307-1	0.010		-0.49	
962	D4870	0.02		0.24	
963	IP375	0.01		-0.49	
971	IP375	0.019		0.17	
974	IP375	0.02		0.24	
994	IP375	0.02		0.24	
995	IP375	0.017		0.02	
996	D4870	0.016		-0.05	
997		----		----	
1011	ISO10307-1	0.01		-0.49	
1039		----		----	
1040	ISO10307-1	<0.01		----	

Determination of Total Sediment Existent (TSE) of sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108	ISO10307-1	0.02		0.24	
1121	ISO10307-1	0.023		0.46	
1126		----		----	
1134	IP375	0.016		-0.05	
1191	ISO10307-1	0.044	R(0.01)	2.01	
1205		----		----	
1212	IP375	0.0062		-0.77	
1218		----		----	
1259		----		----	
1264	D4870	0.02		0.24	
1297		----		----	
1299	ISO10307-1	<0.01		----	
1320		----		----	
1353		----		----	
1356	ISO10307-1	0.02		0.24	
1381		----		----	
1402	IP375	0.01		-0.49	
1431	D4870	0.023		0.46	
1438		----		----	
1443		----		----	
1585	IP375	0.0192		0.18	
1586	ISO10307-1	0.01		-0.49	
1636		----		----	
1648	ISO10307-1	0.019		0.17	
1665	D4870	2.162	R(0.01)	158.08	
1681	ISO10307-1	0.010		-0.49	
1720		----		----	
1730		----		----	
1740	D4870	0.016		-0.05	
1741		----		----	
1776		----		----	
1810		----	W	----	test result withdrawn, reported 3.44
1811	IP375	0.021		0.32	
1854	ISO10307-1	0.020		0.24	
1857	IP375	0.018		0.10	
1862	D4870	0.016		-0.05	
1906		----		----	
1942	D4870	0.014		-0.20	
1949	IP375	0.0170		0.02	
1995	D4870	0.013		-0.27	
2129	IP375	0.017		0.02	
2146		----		----	
6026	ISO10307-1	0.0165		-0.02	
6075		----		----	
6092		----		----	
6112		----		----	
6114	IP375	0.019		0.17	
6142		----		----	
6143		----		----	
6203	ISO10307-1	0.0390	R(0.05)	1.64	
6226	IP375	0.01		-0.49	
6238		----		----	
6266		----		----	
6319		----		----	
6335		----		----	
6364		----		----	
6373		----		----	
6404		----		----	
6406	IP375	0.0056		-0.82	
6438	D4870	0.03		0.98	
6447		----		----	
6505		----		----	
6530	IP375	0.0021		-1.08	
6563		----		----	

Determination of Total Sediment Existent (TSE) of sample #23275; results in %M/M

normality	suspect
n	67
outliers	3
mean (n)	0.0167
st.dev. (n)	0.00605
R(calc.)	0.0169
st.dev.(IP375:11R22)	0.01357
R(IP375:11R22)	0.0380

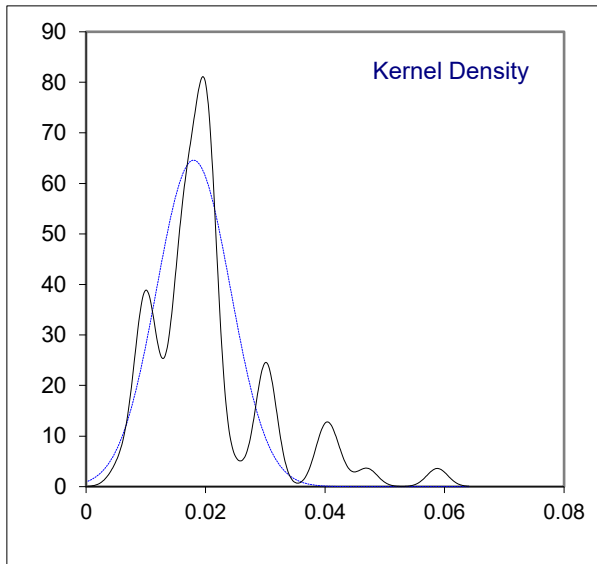
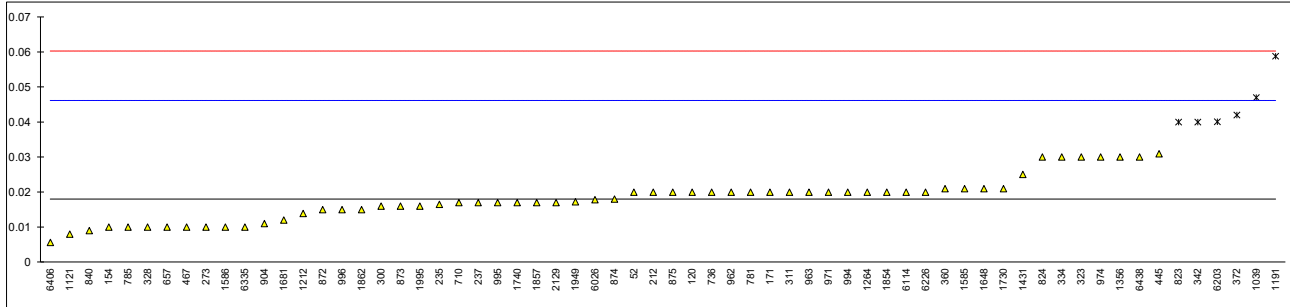


Determination of Total Sediment Accelerated (TSA) of sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
52	D4870	0.02		0.14	
120	D4870	0.02		0.14	
150		----		----	
154	D4870	0.01		-0.57	
159		----		----	
169		----		----	
171	IP390	0.02		0.14	
212	ISO10307-2	0.02		0.14	
223		----		----	
225		----		----	
228		----		----	
231		----		----	
235	ISO10307-2	0.0165		-0.11	
237	D4870	0.017		-0.07	
238		----		----	
253		----		----	
256		----		----	
273	ISO10307-2	0.01		-0.57	
300	ISO10307-2	0.016		-0.14	
309		----		----	
311	ISO10307-2	0.02		0.14	
313		----		----	
323	ISO10307-2	0.03		0.85	
328	IP390	0.01		-0.57	
333	ISO10307-2	<0.01		----	
334	IP390	0.03		0.85	
339		----		----	
342	ISO10307-2	0.04	C,R(0.05)	1.56	first reported 0.08
349		----		----	
352		----		----	
360	ISO10307-2	0.021		0.21	
372	IP390	0.042	R(0.05)	1.70	
381		----		----	
391		----		----	
404		----		----	
445	IP390	0.0309		0.92	
447		----		----	
455		----		----	
467	ISO10307-2	0.01		-0.57	
507		----		----	
541	ISO10307-2	<0.01		----	
551		----		----	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657	IP390	0.01		-0.57	
710	D4870	0.017		-0.07	
736	IP390	0.02		0.14	
752		----		----	
753		----		----	
778		----		----	
781	IP390	0.02		0.14	
785	IP390	0.01		-0.57	
798		----		----	
823	ISO10307-2	0.04	R(0.05)	1.56	
824	ISO10307-2	0.03	C	0.85	first reported 0.06
825		----		----	
840	ISO10307-2	0.009		-0.64	
872	ISO10307-2	0.015		-0.21	
873	IP390	0.016		-0.14	
874	IP390	0.018		0.00	
875	IP390	0.02		0.14	
887		----		----	
904	ISO10307-2	0.011		-0.50	
962	D4870	0.02		0.14	
963	IP390	0.02		0.14	
971	IP390	0.020		0.14	
974	IP390	0.03		0.85	
994	IP390	0.02		0.14	
995	IP390	0.017		-0.07	
996	D4870	0.015		-0.21	
997		----		----	
1011		----		----	
1039	ISO10307-2	0.047	R(0.05)	2.06	
1040	ISO10307-2	<0,01		----	

Determination of Total Sediment Accelerated (TSA) of sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108		----		----	
1121	ISO10307-2	0.008		-0.71	
1126		----		----	
1134		----		----	
1191	ISO10307-2	0.0588	R(0.01)	2.90	
1205		----		----	
1212	IP390	0.0139		-0.29	
1218		----		----	
1259		----		----	
1264	D4870	0.02		0.14	
1297		----		----	
1299	ISO10307-2	<0.01		----	
1320		----		----	
1353		----		----	
1356	ISO10307-2	0.03		0.85	
1381		----		----	
1402	IP390	<0.01		----	
1431	D4870	0.025		0.50	
1438		----		----	
1443		----		----	
1585	IP390	0.021		0.21	
1586	ISO10307-2	0.01		-0.57	
1636		----		----	
1648	ISO10307-2	0.021		0.21	
1665		----		----	
1681	ISO10307-2	0.012		-0.43	
1720		----		----	
1730	ISO10307-2	0.021		0.21	
1740	D4870	0.017		-0.07	
1741		----		----	
1776		----		----	
1810		----		----	
1811		----		----	
1854	ISO10307-2	0.020		0.14	
1857	IP390	0.017		-0.07	
1862	D4870	0.015		-0.21	
1906		----		----	
1942		----		----	
1949	IP390	0.0172		-0.06	
1995	D4870	0.016		-0.14	
2129	IP390	0.017		-0.07	
2146		----		----	
6026	ISO10307-2	0.0178		-0.01	
6075		----		----	
6092		----		----	
6112		----		----	
6114	IP390	0.020		0.14	
6142		----		----	
6143		----		----	
6203	ISO10307-2	0.0401	R(0.05)	1.57	
6226	IP390	0.02		0.14	
6238		----		----	
6266		----		----	
6319		----		----	
6335	D4870	0.01		-0.57	
6364		----		----	
6373		----		----	
6404		----		----	
6406	IP390	0.0056		-0.88	
6438	D4870	0.03		0.85	
6447		----		----	
6505		----		----	
6530		----		----	
6563		----		----	

Determination of Total Sediment Accelerated (TSA) of sample #23275; results in %M/M

normality	OK
n	58
outliers	6
mean (n)	0.0180
st.dev. (n)	0.00618
R(calc.)	0.0173
st.dev.(IP390:11R17)	0.01409
R(IP390:11R17)	0.0394

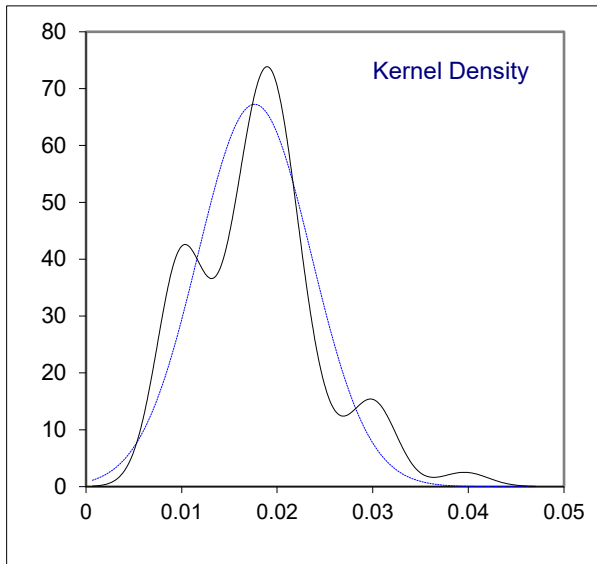
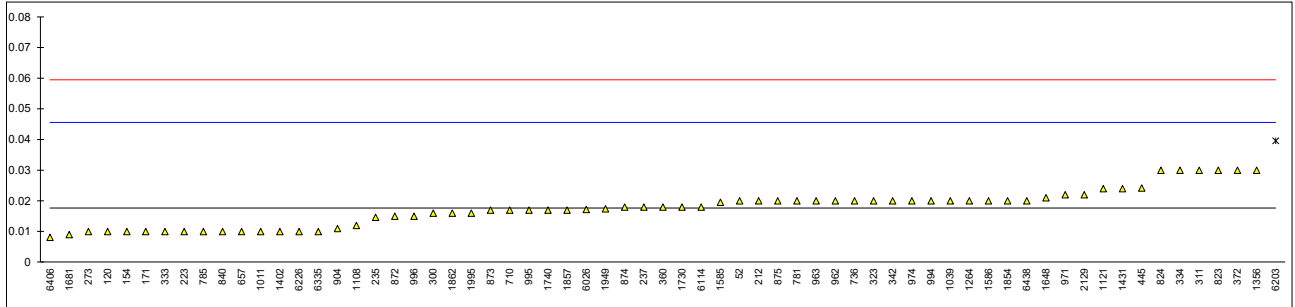


Determination of Total Sediment Potential (TSP) of sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
52	D4870	0.02		0.17	
120	D4870	0.01		-0.55	
150		----		----	
154	D4870	0.01		-0.55	
159		----		----	
169		----		----	
171	IP390	0.01		-0.55	
212	ISO10307-2	0.02		0.17	
223	IP390	0.01		-0.55	
225		----		----	
228		----		----	
231		----		----	
235	ISO10307-2	0.0146		-0.22	
237	D4870	0.018		0.03	
238		----		----	
253		----		----	
256		----		----	
273	ISO10307-2	0.01		-0.55	
300	ISO10307-2	0.016		-0.12	
309		----		----	
311	ISO10307-2	0.03		0.89	
313		----		----	
323	ISO10307-2	0.02		0.17	
328		----		----	
333	ISO10307-2	0.01		-0.55	
334	IP390	0.03		0.89	
339		----		----	
342	ISO10307-2	0.02		0.17	
349		----		----	
352		----		----	
360	ISO10307-2	0.018		0.03	
372	IP390	0.030		0.89	
381		----		----	
391		----		----	
404		----		----	
445	IP390	0.0242		0.47	
447		----		----	
455		----		----	
467		----		----	
507		----		----	
541		----		----	
551		----		----	
575		----		----	
621		----		----	
633		----		----	
634		----		----	
657	IP390	0.01		-0.55	
710	D4870	0.017		-0.05	
736	IP390	0.02		0.17	
752		----		----	
753		----		----	
778		----		----	
781	IP390	0.02		0.17	
785	IP390	0.01		-0.55	
798		----		----	
823	ISO10307-2	0.03		0.89	
824	ISO10307-2	0.03		0.89	
825		----		----	
840	ISO10307-2	0.010		-0.55	
872	ISO10307-2	0.015		-0.19	
873	IP390	0.017		-0.05	
874	IP390	0.018		0.03	
875	IP390	0.02		0.17	
887		----		----	
904	ISO10307-2	0.011		-0.48	
962	D4870	0.02		0.17	
963	IP390	0.02		0.17	
971	IP390	0.022		0.31	
974	IP390	0.02		0.17	
994	IP390	0.02		0.17	
995	IP390	0.017		-0.05	
996	D4870	0.015		-0.19	
997		----		----	
1011	ISO10307-2	0.01		-0.55	
1039	ISO10307-2	0.02		0.17	
1040		----		----	

Determination of Total Sediment Potential (TSP) of sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065		----		----	
1082		----		----	
1108	ISO10307-2	0.012		-0.40	
1121	ISO10307-2	0.024		0.46	
1126		----		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212		----		----	
1218		----		----	
1259		----		----	
1264	D4870	0.02		0.17	
1297		----		----	
1299	ISO10307-2	<0.01		----	
1320		----		----	
1353		----		----	
1356	ISO10307-2	0.03		0.89	
1381		----		----	
1402	IP390	0.01		-0.55	
1431	D4870	0.024		0.46	
1438		----		----	
1443		----		----	
1585	IP390	0.0195		0.13	
1586	ISO10307-2	0.02		0.17	
1636		----		----	
1648	ISO10307-2	0.021		0.24	
1665		----		----	
1681	ISO10307-2	0.009		-0.62	
1720		----		----	
1730	ISO10307-2	0.018		0.03	
1740	D4870	0.017		-0.05	
1741		----		----	
1776		----		----	
1810		----		----	
1811		----		----	
1854	ISO10307-2	0.020		0.17	
1857	IP390	0.017		-0.05	
1862	D4870	0.016		-0.12	
1906		----		----	
1942		----		----	
1949	IP390	0.0174		-0.02	
1995	D4870	0.016		-0.12	
2129	IP390	0.022		0.31	
2146		----		----	
6026	ISO10307-2	0.0172		-0.03	
6075		----		----	
6092		----		----	
6112		----		----	
6114	IP390	0.018		0.03	
6142		----		----	
6143		----		----	
6203	ISO10307-2	0.0396	R(0.05)	1.57	
6226	IP390	0.01		-0.55	
6238		----		----	
6266		----		----	
6319		----		----	
6335	D4870	0.01		-0.55	
6364		----		----	
6373		----		----	
6404		----		----	
6406	IP375	0.0081		-0.68	
6438	D4870	0.02		0.17	
6447		----		----	
6505		----		----	
6530		----		----	
6563		----		----	

Determination of Total Sediment Potential (TSP) of sample #23275; results in %M/M

normality	OK
n	64
outliers	1
mean (n)	0.0176
st.dev. (n)	0.00593
R(calc.)	0.0166
st.dev.(IP390:11R17)	0.01395
R(IP390:11R17)	0.0390

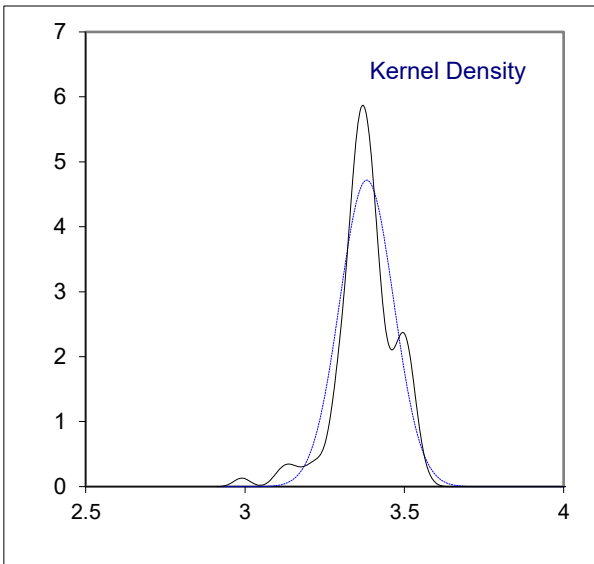
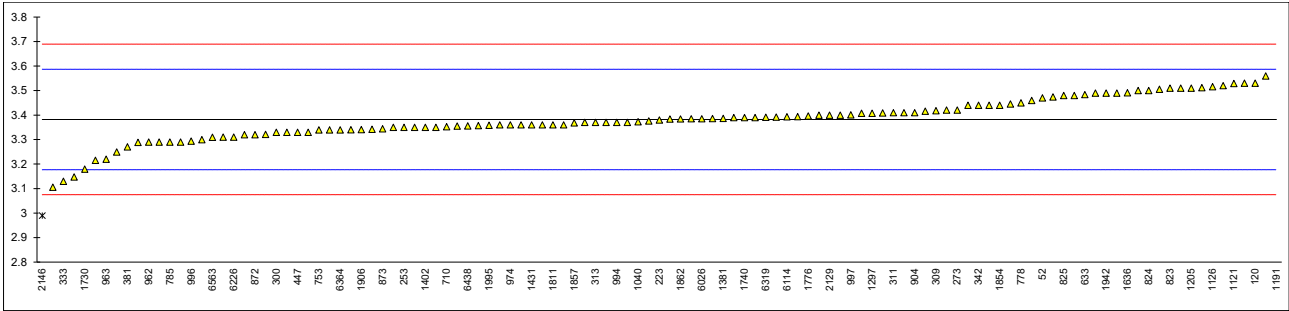


Determination of Total Sulfur on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
52	D4294	3.47		0.86	
120	D4294	3.53		1.45	
150	D4294	3.51		1.25	
154	D4294	3.50		1.15	
159		----		----	
169	D4294	3.49		1.05	
171		----		----	
212	ISO8754	3.357		-0.24	
223	D1552	3.38		-0.02	
225	D4294	3.35		-0.31	
228	D4294	3.41		0.27	
231	D4294	3.416		0.33	
235	D4294	3.321		-0.60	
237		----		----	
238	D4294	3.40		0.18	
253	D4294	3.35		-0.31	
256		----		----	
273	D4294	3.42		0.37	
300	D4294	3.33		-0.51	
309	ISO8754	3.418		0.35	
311	ISO8754	3.41		0.27	
313	ISO8754	3.37		-0.12	
323	ISO8754	3.32		-0.61	
328	D4294	3.46		0.76	
333	ISO8754	3.13		-2.46	
334	ISO8754	3.29		-0.90	
339	INH-024	3.52		1.35	
342	D4294	3.44	C	0.57	first reported 3.578
349		----		----	
352	ISO8754	3.3937		0.11	
360	D4294	3.376		-0.06	
372	D4294	3.386		0.04	
381	ISO8754	3.27		-1.09	
391	ISO8754	3.392		0.10	
404		----		----	
445		----		----	
447	IP336	3.33		-0.51	
455	IP336	3.33		-0.51	
467	ISO8754	3.42		0.37	
507		----		----	
541		----		----	
551	D4294	3.53		1.45	
575		----		----	
621	D4294	3.37		-0.12	
633	D4294	3.4835		0.99	
634	D4294	3.56		1.74	
657	D4294	3.4084		0.26	
710	D4294	3.353		-0.28	
736	ISO8754	3.44		0.57	
752		----		----	
753	ISO8754	3.34		-0.41	
778	D4294	3.45		0.66	
781	ISO8754	3.342		-0.39	
785	D4294	3.29		-0.90	
798		----		----	
823	ISO8754	3.51		1.25	
824	ISO8754	3.50		1.15	
825	ISO8754	3.48		0.96	
840	ISO8754	3.512		1.27	
872	D4294	3.32		-0.61	
873	ISO8754	3.344		-0.37	
874	ISO8754	3.37		-0.12	
875	D4294	3.30		-0.80	
887		----		----	
904	ISO8754	3.41		0.27	
962	D4294	3.29		-0.90	
963	ISO8754	3.22		-1.58	
971	ISO8754	3.36		-0.21	
974	D4294	3.36		-0.21	
994	D4294	3.37		-0.12	
995	ISO8754	3.407		0.24	
996	D4294	3.294		-0.86	
997	D4294	3.401		0.19	
1011		----		----	
1039	ISO8754	3.36		-0.21	
1040	ISO8754	3.373		-0.09	

Determination of Total Sulfur on sample #23275; results in %M/M					
lab	method	value	mark	z(targ)	remarks
1059		----		----	
1065	D4294	3.34		-0.41	
1082	ISO8754	3.3405		-0.40	
1108	ISO8754	3.445		0.62	
1121	ISO8754	3.529		1.44	
1126	ISO8754	3.516		1.31	
1134	IP336	3.35		-0.31	
1191	ISO8754	4.480	R(0.01)	10.72	
1205	ISO14596	3.510		1.25	
1212	ISO8754	3.289		-0.91	
1218		----		----	
1259	ISO8754	3.37		-0.12	
1264	D4294	3.39		0.08	
1297	D4294	3.407		0.24	
1299		----		----	
1320		----		----	
1353	ISO8754	3.216		-1.62	
1356	ISO8754	3.33		-0.51	
1381	ISO8754	3.387		0.05	
1402	IP336	3.35		-0.31	
1431	D4294	3.36		-0.21	
1438	D4294	3.31		-0.70	
1443	ISO8754	3.35		-0.31	
1585	D4294	3.355		-0.26	
1586	ISO8754	3.36		-0.21	
1636	D4294	3.491		1.06	
1648	ISO8754	3.384		0.02	
1665	D2622	3.48		0.96	
1681	ISO8754	3.250		-1.29	
1720		----		----	
1730	D4294	3.18		-1.97	
1740	D4294	3.39		0.08	
1741	ISO8754	3.39		0.08	
1776	ISO8754	3.396		0.14	
1810	D4294	3.44		0.57	
1811	ISO8754	3.36		-0.21	
1854	ISO8754	3.44		0.57	
1857	ISO8754	3.368		-0.14	
1862	D4294	3.3846		0.03	
1906	D5623	3.341		-0.40	
1942	D4294	3.49		1.05	
1949	D4294	3.385		0.03	
1995	D4294	3.358		-0.23	
2129	ISO8754	3.40		0.18	
2146	ISO8754	2.99	R(0.01)	-3.83	
6026	D4294	3.385		0.03	
6075	ISO8754	3.1473		-2.29	
6092	D4294	3.49		1.05	
6112		----		----	
6114	ISO8754	3.393		0.11	
6142		----		----	
6143	D2622	3.290		-0.90	
6203	D2622	3.505		1.20	
6226	ISO8754	3.310		-0.70	
6238		----		----	
6266		----		----	
6319	D4294	3.391		0.09	
6335	D5186	3.474		0.90	
6364	D4294	3.34		-0.41	
6373		----		----	
6404	ISO8754	3.3600		-0.21	
6406	ISO8754	3.106		-2.69	
6438	D4294	3.356		-0.25	
6447		----		----	
6505		----		----	
6530	D4294	3.40		0.18	
6563	D4294	3.3095		-0.71	

Determination of Total Sulfur on sample #23275; results in %M/M

normality	suspect
n	115
outliers	2
mean (n)	3.3820
st.dev. (n)	0.08453
R(calc.)	0.2367
st.dev.(ISO8754:03)	0.10243
R(ISO8754:03)	0.2868
compare	
R(D4294:21)	0.1594

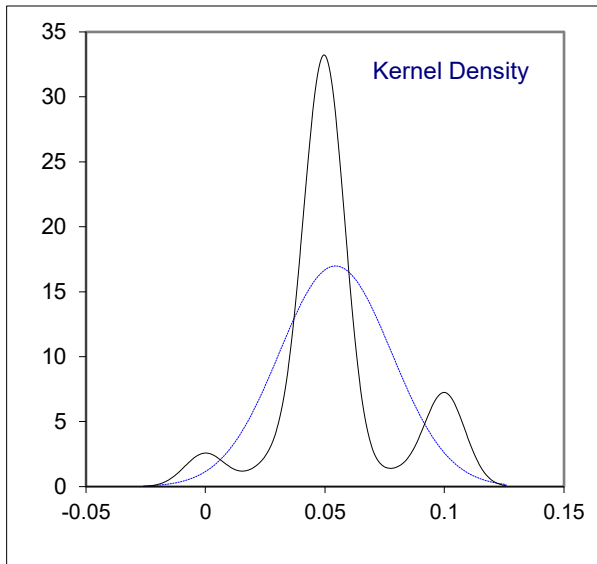
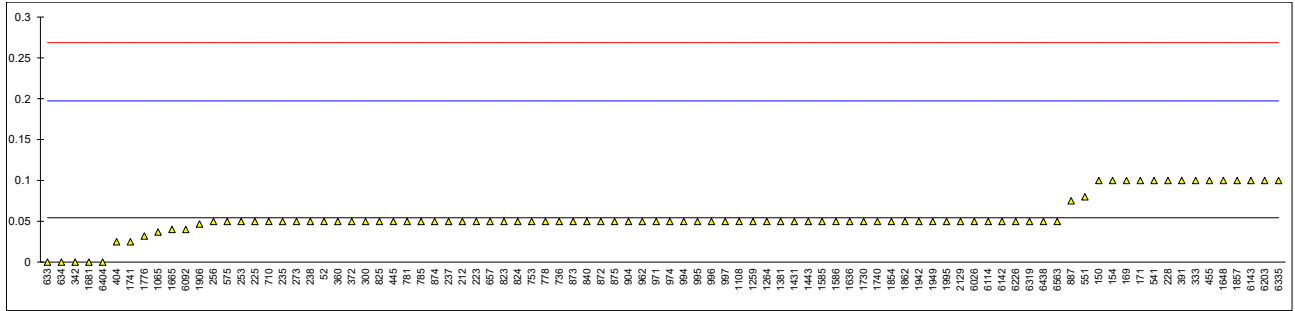


Determination of Water by distillation on sample #23275; results in %V/V					
lab	method	value	mark	z(targ)	remarks
52	D95	0.05		-0.06	
120		----		----	
150	D96	0.10		0.64	
154	D95	0.10		0.64	
159		----		----	
169	D95	0.10		0.64	
171	D95	0.10		0.64	
212	ISO3733	0.05		-0.06	
223	D95	0.05		-0.06	
225	D95	0.05		-0.06	
228	D95	0.1		0.64	
231	D95	<0.05		----	
235	ISO3733	0.05		-0.06	
237	D95	0.05		-0.06	
238	D95	0.05		-0.06	
253	D95	0.05		-0.06	
256	D95	0.05		-0.06	
273	D95	0.05		-0.06	
300	D6304-B	0.05		-0.06	
309		----		----	
311	D95	<0.05		----	
313	D95	<0.05		----	
323	ISO3733	<0.1		----	
328		----		----	
333	D95	0.10		0.64	
334	D95	<0.1		----	
339		----		----	
342	D95	0		-0.76	
349	D95	<0,1		----	
352	D95	<0,05		----	
360	D95	0.05		-0.06	
372	D95	0.05		-0.06	
381		----		----	
391	ISO3733	0.10		0.64	
404	D95	0.025		-0.41	
445	ISO3733	0.05		-0.06	
447	D95	<0.05		----	
455	D95	0.1		0.64	
467	ISO3733	<0,1		----	
507		----		----	
541	D95	0.1		0.64	
551	D95	0.08		0.36	
575	D95	0.05		-0.06	
621	D95	<0.05		----	
633	D95	0		-0.76	
634	D95	0.00		-0.76	
657	D95	0.05		-0.06	
710	D95	0.05		-0.06	
736	ISO3733	0.05		-0.06	
752		----		----	
753	ISO3733	0.05		-0.06	
778	D95	0.05		-0.06	
781	ISO3733	0.05		-0.06	
785	ISO3733	0.05		-0.06	
798		----		----	
823	ISO3733	0.05		-0.06	
824	ISO3733	0.05		-0.06	
825	ISO3733	0.05		-0.06	
840	ISO3733	0.05		-0.06	
872	D95	0.05		-0.06	
873	D95	0.05		-0.06	
874	ISO3733	0.05		-0.06	
875	D95	0.05		-0.06	
887	D95	0.075		0.29	
904	ISO3733	0.05		-0.06	
962	D95	0.05		-0.06	
963	ISO3733	<0.5		----	
971	ISO3733	0.05		-0.06	
974	D95	0.05		-0.06	
994	D95	0.05		-0.06	
995	ISO3733	0.05		-0.06	
996	D95	0.05		-0.06	
997	ISO3733	0.05		-0.06	
1011	ISO3733	<0.10		----	
1039	ISO3733	<0.1		----	
1040		----		----	

Determination of Water by distillation on sample #23275; results in %V/V					
lab	method	value	mark	z(targ)	remarks
1059	ISO3733	<0,05		----	
1065	D6304-C	0.0370		-0.24	
1082		----		----	
1108	ISO3733	0.05		-0.06	
1121	ISO3733	<0.05		----	
1126	D95	<0,05		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212	ISO3733	<0,1		----	
1218		----		----	
1259	ISO3733	0.05		-0.06	
1264	D95	0.05		-0.06	
1297		----		----	
1299	D95	<0.1		----	
1320		----		----	
1353		----		----	
1356	D6304-A	<0.05		----	
1381	ISO3733	0.05		-0.06	
1402	IP74	<0.05		----	
1431	D95	0.05		-0.06	
1438		----		----	
1443	ISO3733	0.05		-0.06	
1585	D95	0.05		-0.06	
1586	ISO3733	0.05		-0.06	
1636	D95	0.05		-0.06	
1648	ISO3733	0.10		0.64	
1665	D6304-C	0.04		-0.20	
1681	ISO3733	0.0		-0.76	
1720		----		----	
1730	D95	0.05		-0.06	
1740	D95	0.05		-0.06	
1741	ISO3733	0.025		-0.41	
1776	D6304-B	0.032		-0.31	
1810		----		----	
1811		----		----	
1854	D95	0.05		-0.06	
1857	ISO3733	0.10		0.64	
1862	D95	0.05		-0.06	
1906	D6304-C	0.0467		-0.11	
1942	D95	0.05		-0.06	
1949	D95	0.05		-0.06	
1995	D95	0.05		-0.06	
2129	ISO3733	0.05		-0.06	
2146		----		----	
6026	ISO3733	0.05		-0.06	
6075		----		----	
6092	D95	0.04		-0.20	
6112		----		----	
6114	ISO3733	0.05		-0.06	
6142	ISO3733	0.05		-0.06	
6143	D95	0.1		0.64	
6203	D95	0.1		0.64	
6226	ISO3733	0.05		-0.06	
6238		----		----	
6266		----		----	
6319	D95	0.05		-0.06	
6335	D6304-C	0.10		0.64	
6364		----		----	
6373		----		----	
6404	ISO3733	0.0		-0.76	
6406	ISO3733	<0.05		----	
6438	D95	0.05		-0.06	
6447		----		----	
6505		----		----	
6530		----		----	
6563	D95	0.05		-0.06	

Determination of Water by distillation on sample #23275; results in %V/V

normality	suspect
n	90
outliers	0
mean (n)	0.0545
st.dev. (n)	0.02351
R(calc.)	0.0658
st.dev.(ISO3733:99)	0.07143
R(ISO3733:99)	0.2
compare	
R(D95:23)	0.2

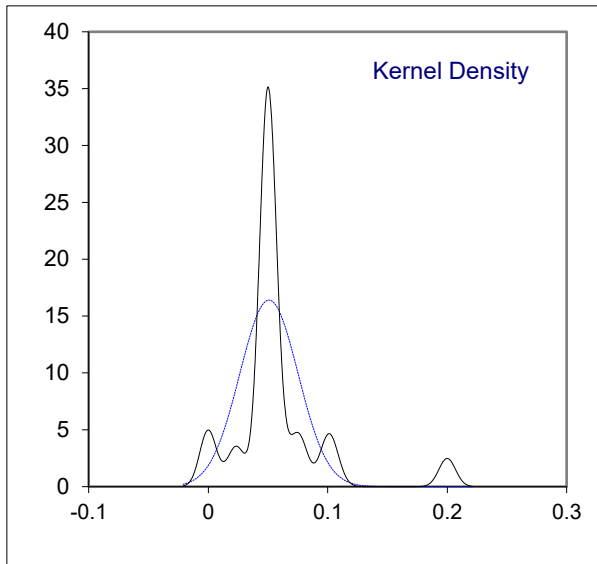
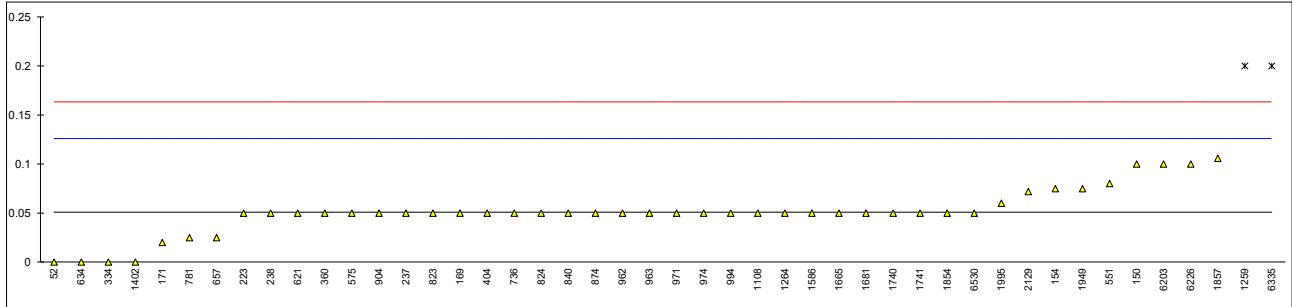


Determination of Water and Sediment on sample #23275; results in %V/V					
lab	method	value	mark	z(targ)	remarks
52	D1796	0.00		-1.36	
120		----		----	
150	D1796	0.10		1.31	
154	D1796	0.075		0.64	
159		----		----	
169	D1796	0.05		-0.02	
171	D1796	0.02		-0.82	
212		----		----	
223	D1796	0.05		-0.02	
225		----		----	
228		----		----	
231	D1796	<0.05		----	
235		----		----	
237	D1796	0.05		-0.02	
238	D1796	0.05		-0.02	
253		----		----	
256		----		----	
273		----		----	
300		----		----	
309		----		----	
311		----		----	
313		----		----	
323		----		----	
328		----		----	
333		----		----	
334	ISO3734	0		-1.36	
339		----		----	
342		----		----	
349		----		----	
352		----		----	
360	D1796	0.05		-0.02	
372		----		----	
381		----		----	
391		----		----	
404	D1796	0.05		-0.02	
445		----		----	
447		----		----	
455		----		----	
467		----		----	
507		----		----	
541	D1796	<0.1		----	
551	D1796	0.08		0.78	
575	D1796	0.05		-0.02	
621	D1796	0.05		-0.02	
633	D1796	<0.10		----	
634	D1796	0.00		-1.36	
657	D1796	0.025		-0.69	
710		----		----	
736	D1796	0.05		-0.02	
752		----		----	
753		----		----	
778		----		----	
781	D1796	0.025		-0.69	
785		----		----	
798		----		----	
823	ISO3734	0.05		-0.02	
824	D1796	0.05		-0.02	
825		----		----	
840	D1796	0.05		-0.02	
872		----		----	
873		----		----	
874	D1796	0.05		-0.02	
875		----		----	
887		----		----	
904	D1796	0.05		-0.02	
962	D1796	0.05		-0.02	
963	D1796	0.05		-0.02	
971	D1796	0.05		-0.02	
974	D1796	0.05		-0.02	
994	D1796	0.05		-0.02	
995		----		----	
996		----		----	
997		----		----	
1011		----		----	
1039		----		----	
1040		----		----	

Determination of Water and Sediment on sample #23275; results in %V/V					
lab	method	value	mark	z(targ)	remarks
1059	ISO3734	<0,05		----	
1065		----		----	
1082		----		----	
1108	D1796	0.05		-0.02	
1121		----		----	
1126		----		----	
1134		----		----	
1191		----		----	
1205		----		----	
1212		----		----	
1218		----		----	
1259	ISO3734	0.2	R(0.01)	3.98	
1264	D1796	0.05		-0.02	
1297		----		----	
1299		----		----	
1320		----		----	
1353		----		----	
1356		----		----	
1381		----		----	
1402	D1796	0		-1.36	
1431		----		----	
1438		----		----	
1443		----		----	
1585		----		----	
1586	D1796	0.05		-0.02	
1636		----		----	
1648		----		----	
1665	D1796	0.05		-0.02	
1681	D1796	0.05		-0.02	
1720		----		----	
1730		----		----	
1740	D1796	0.05		-0.02	
1741	ISO3734	0.05		-0.02	
1776		----		----	
1810		----		----	
1811		----		----	
1854	D1796	0.05		-0.02	
1857	Calculated	0.106		1.47	
1862		----		----	
1906		----		----	
1942		----		----	
1949	D1796	0.075		0.64	
1995	D1796	0.06		0.24	
2129	D1796	0.072		0.56	
2146		----		----	
6026		----		----	
6075		----		----	
6092		----		----	
6112		----		----	
6114		----		----	
6142		----		----	
6143		----		----	
6203	D1796	0.1		1.31	
6226	D1796	0.10		1.31	
6238		----		----	
6266		----		----	
6319		----		----	
6335	D1796	0.20	R(0.01)	3.98	
6364		----		----	
6373		----		----	
6404		----		----	
6406		----		----	
6438		----		----	
6447		----		----	
6505		----		----	
6530	D1796	0.05		-0.02	
6563		----		----	

Determination of Water and Sediment on sample #23275; results in %V/V

normality	suspect
n	44
outliers	2
mean (n)	0.0509
st.dev. (n)	0.02435
R(calc.)	0.0682
st.dev.(D1796:22)	0.03750
R(D1796:22)	0.1050

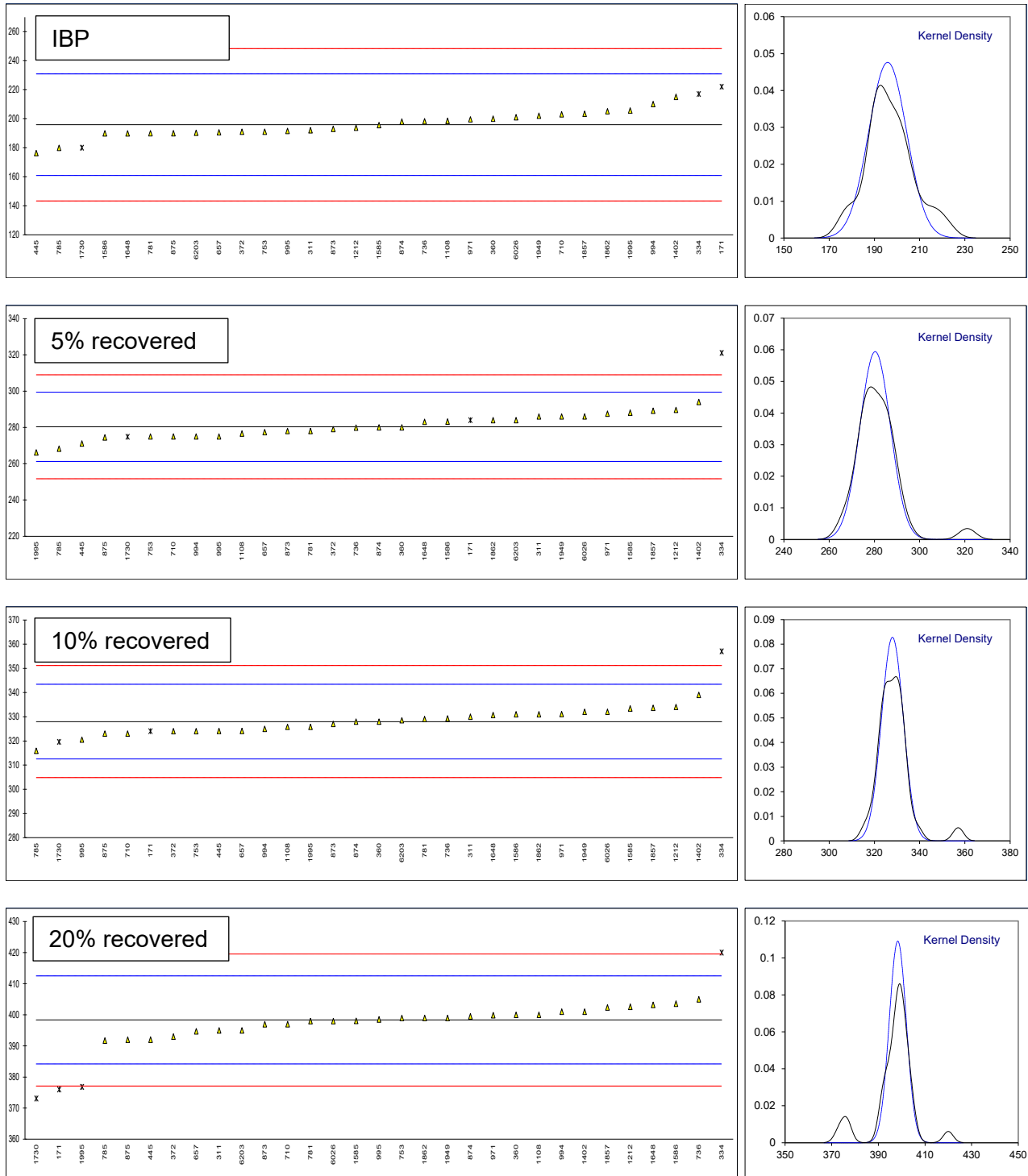


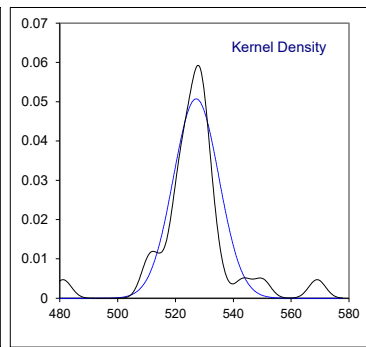
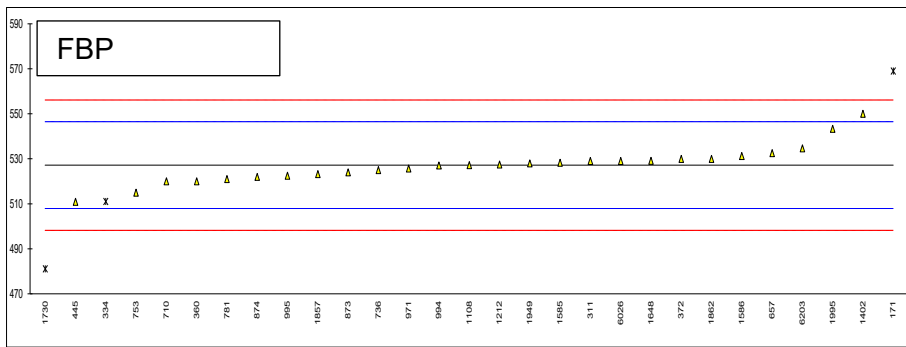
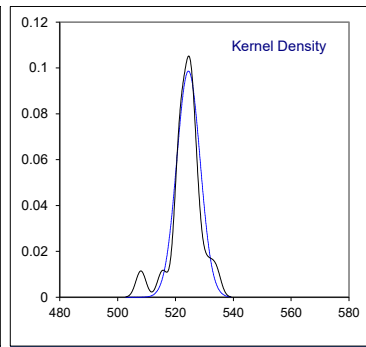
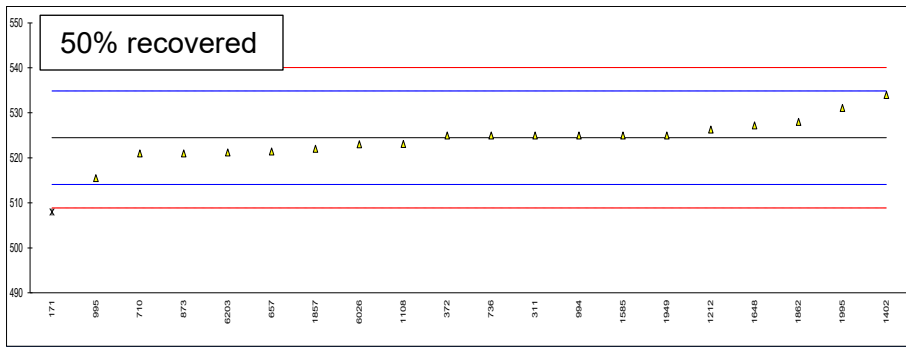
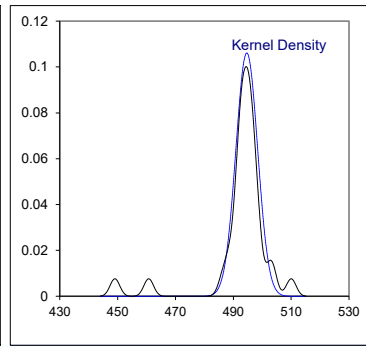
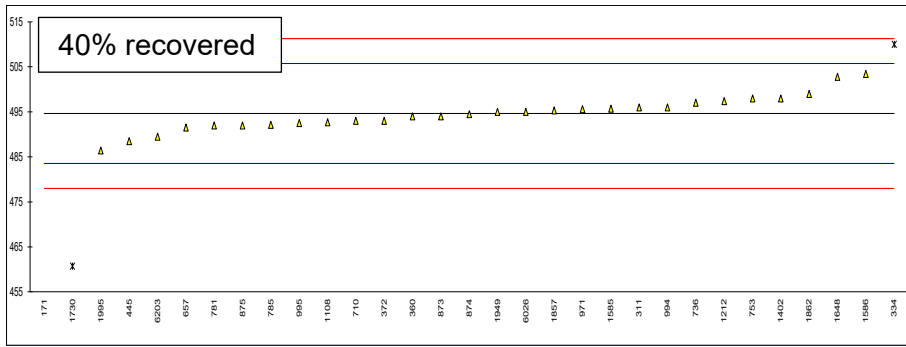
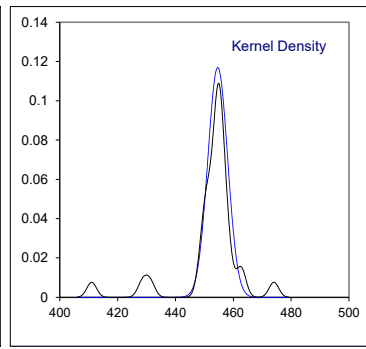
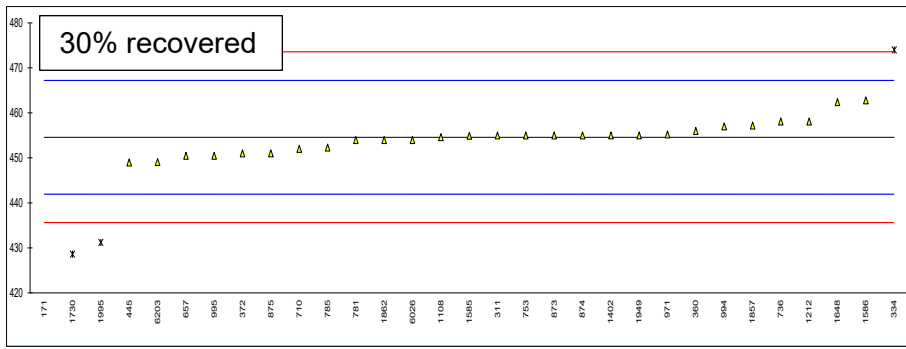
Vacuum Distillation at 10 mmHg but reported as AET on sample #23275; results in °C									
lab	method	IBP	5% rec	10% rec	20% rec	30% rec	40% rec	50% rec	FBP
52		----	----	----	----	----	----	----	----
120		----	----	----	----	----	----	----	----
150		----	----	----	----	----	----	----	----
154		----	----	----	----	----	----	----	----
159		----	----	----	----	----	----	----	----
169		----	----	----	----	----	----	----	----
171	D1160	222 ex	284 ex	324 ex	376 R1	411 R1	449 R1	508 R5	569 R1
212		----	----	----	----	----	----	----	----
223		----	----	----	----	----	----	----	----
225		----	----	----	----	----	----	----	----
228		----	----	----	----	----	----	----	----
231		----	----	----	----	----	----	----	----
235		----	----	----	----	----	----	----	----
237		----	----	----	----	----	----	----	----
238		----	----	----	----	----	----	----	----
253		----	----	----	----	----	----	----	----
256		----	----	----	----	----	----	----	----
273		----	----	----	----	----	----	----	----
300		----	----	----	----	----	----	----	----
309		----	----	----	----	----	----	----	----
311	D1160	192	286	330	395	455	496	525	529
313		----	----	----	----	----	----	----	----
323		----	----	----	----	----	----	----	----
328		----	----	----	----	----	----	----	----
333		----	----	----	----	----	----	----	----
334	D1160	217 ex	321 R1	357 R1	420 R1	474 R1	510 R5	----	511 ex
339		----	----	----	----	----	----	----	----
342		----	----	----	----	----	----	----	----
349		----	----	----	----	----	----	----	----
352		----	----	----	----	----	----	----	----
360	D1160	200	280	328	400	456	494	----	520
372	D1160	191	279	324	393	451	493	525	530
381		----	----	----	----	----	----	----	----
391		----	----	----	----	----	----	----	----
404		----	----	----	----	----	----	----	----
445	D1160	176.3	271.1	324.1	392.0	449.0	488.5	----	510.9
447		----	----	----	----	----	----	----	----
455		----	----	----	----	----	----	----	----
467		----	----	----	----	----	----	----	----
507		----	----	----	----	----	----	----	----
541		----	----	----	----	----	----	----	----
551		----	----	----	----	----	----	----	----
575		----	----	----	----	----	----	----	----
621		----	----	----	----	----	----	----	----
633		----	----	----	----	----	----	----	----
634		----	----	----	----	----	----	----	----
657	D1160	190.6	277.4	324.1	394.7	450.5	491.5	521.4	532.5
710	D1160	203	275	323	397	452	493	521	520
736	D1160	198.2	279.8	329.3	405.0	458.1	497.0	525.0	525.0
752		----	----	----	----	----	----	----	----
753	D1160	191	275	324	399	455	498	----	515
778		----	----	----	----	----	----	----	----
781	D1160	190	278	329	398	454	492	----	521
785	D1160	179.9	268.2	315.9	391.7	452.3	492.1	----	----
798		----	----	----	----	----	----	----	----
823		----	----	----	----	----	----	----	----
824		----	----	----	----	----	----	----	----
825		----	----	----	----	----	----	----	----
840		----	----	----	----	----	----	----	----
872		----	----	----	----	----	----	----	----
873	D1160	193	278	327	397	455	494	521	524
874	D1160	198.0	280.0	328.0	399.5	455.0	494.5	----	522
875	D1160	190.0	274.5	323.0	392.0	451.0	492.0	----	----
887		----	----	----	----	----	----	----	----
904		----	----	----	----	----	----	----	----
962		----	----	----	----	----	----	----	----
963		----	----	----	----	----	----	----	----
971	D1160	199.5	287.5	331.1	399.9	455.2	495.6	----	525.7
974		----	----	----	----	----	----	----	----
994	D1160	210.0	275.0	325.0	401.0	457.0	496.0	525.0	527.0
995	D1160	191.5	275.0	320.5	398.5	450.5	492.5	515.5	522.5
996		----	----	----	----	----	----	----	----
997		----	----	----	----	----	----	----	----
1011		----	----	----	----	----	----	----	----
1039		----	----	----	----	----	----	----	----
1040		----	----	----	----	----	----	----	----

Vacuum Distillation at 10 mmHg but reported as AET on sample #23275; results in °C									
lab	method	IBP	5% rec	10% rec	20% rec	30% rec	40% rec	50% rec	FBP
1059		----	----	----	----	----	----	----	----
1065		----	----	----	----	----	----	----	----
1082		----	----	----	----	----	----	----	----
1108		198.5	276.6	325.8	400.0	454.6	492.7	523.1	527.2
1121		----	----	----	----	----	----	----	----
1126		----	----	----	----	----	----	----	----
1134		----	----	----	----	----	----	----	----
1191		----	----	----	----	----	----	----	----
1205		----	----	----	----	----	----	----	----
1212	D1160	193.8	289.6	334.0	402.6	458.1	497.4	526.3	527.5
1218		----	----	----	----	----	----	----	----
1259		----	----	----	----	----	----	----	----
1264		----	----	----	----	----	----	----	----
1297		----	----	----	----	----	----	----	----
1299		----	----	----	----	----	----	----	----
1320		----	----	----	----	----	----	----	----
1353		----	----	----	----	----	----	----	----
1356		----	----	----	----	----	----	----	----
1381		----	----	----	----	----	----	----	----
1402	D1160	215	294	339	401	455	498	534	550
1431		----	----	----	----	----	----	----	----
1438		----	----	----	----	----	----	----	----
1443		----	----	----	----	----	----	----	----
1585	D1160	195.5	288.1	333.4	398.1	454.9	495.7	525.0	528.3
1586	D1160	189.9	283.2	331.0	403.6	462.8	503.4	-----	531.3
1636		----	----	----	----	----	----	----	----
1648	D1160	189.9	283.0	330.7	403.2	462.4	502.8	527.2	529.1
1665		----	----	----	----	----	----	----	----
1681		----	----	----	----	----	----	----	----
1720		----	----	----	----	----	----	----	----
1730	D1160	180.0 ex	274.8 ex	319.6 ex	373.1 R1	428.6 R1	460.7 R1	-----	481.1 R1
1740		----	----	----	----	----	----	----	----
1741		---- W	---- W	---- W	---- W	---- W	---- W	---- W	---- W
1776		----	----	----	----	----	----	----	----
1810		----	----	----	----	----	----	----	----
1811		----	----	----	----	----	----	----	----
1854		----	----	----	----	----	----	----	----
1857	D1160	203.4	289.2	333.7	402.4	457.2	495.3	522.0	523.2
1862	D1160	205	284	331	399	454	499	528	530
1906		----	----	----	----	----	----	----	----
1942		----	----	----	----	----	----	----	----
1949	D1160	202	286	332	399	455	495	525	528
1995	D1160	205.6	266.2	325.8	376.8 R1	431.2 R1	486.4	531.1	543.3
2129		----	----	----	----	----	----	----	----
2146		----	----	----	----	----	----	----	----
6026	D1160	201	286	332	398	454	495	523	529
6075		----	----	----	----	----	----	----	----
6092		----	----	----	----	----	----	----	----
6112		----	----	----	----	----	----	----	----
6114		----	----	----	----	----	----	----	----
6142		----	----	----	----	----	----	----	----
6143		----	----	----	----	----	----	----	----
6203	D1160	190.3	284.0	328.5	395.0	449.1	489.5	521.2	534.7
6226		----	----	----	----	----	----	----	----
6238		----	----	----	----	----	----	----	----
6266		----	----	----	----	----	----	----	----
6319		----	----	----	----	----	----	----	----
6335		----	----	----	----	----	----	----	----
6364		----	----	----	----	----	----	----	----
6373		----	----	----	----	----	----	----	----
6404		----	----	----	----	----	----	----	----
6406		----	----	----	----	----	----	----	----
6438		----	----	----	----	----	----	----	----
6447		----	----	----	----	----	----	----	----
6505		----	----	----	----	----	----	----	----
6530		----	----	----	----	----	----	----	----
6563		----	----	----	----	----	----	----	----

Vacuum Distillation at 10 mmHg but reported as AET on sample #23275; results in °C								
method	IBP	5% rec	10% rec	20% rec	30% rec	40% rec	50% rec	FBP
normality	OK	OK	OK	OK	OK	OK	suspect	not OK
n	28	28	28	27	27	28	19	26
outliers	0 + 3ex	1 + 2ex	1 + 2ex	4	4	3	1	2 + 1ex
mean (n)	195.85	280.34	327.96	398.34	454.58	494.64	524.46	527.16
st.dev. (n)	8.374	6.714	4.820	3.656	3.412	3.758	4.045	7.866
R(calc.)	23.45	18.80	13.50	10.24	9.55	10.52	11.33	22.03
st.dev.(D1160:18)	17.500	9.552	7.727	7.071	6.322	5.545	5.197	9.643
R(D1160:18)	49	26.75	21.64	19.80	17.70	15.53	14.55	27

Lab 171 test results excluded as statistical outliers in five related parameters
 Lab 334 test results excluded as statistical outliers in five related parameters
 Lab 1730 test results excluded as statistical outliers in four related parameters
 Lab 1741 test results withdrawn, reported 248.4, 304.8, 346.0, 412.3, 465.5, 506.3, 543.9 and 580.8 respectively





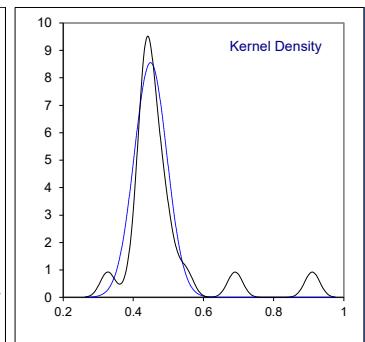
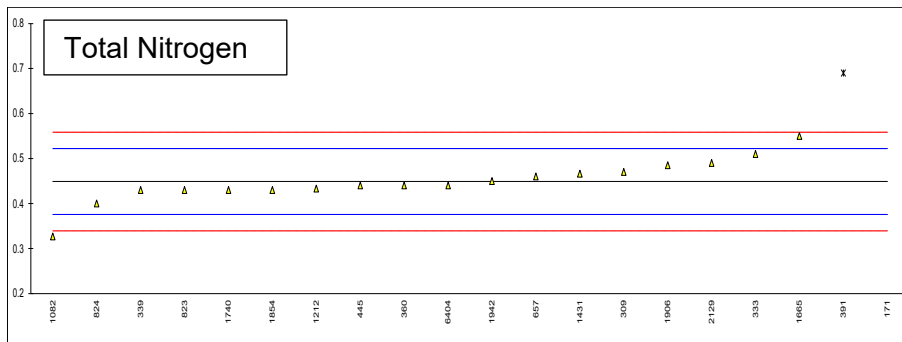
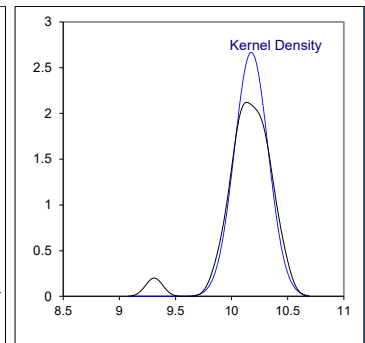
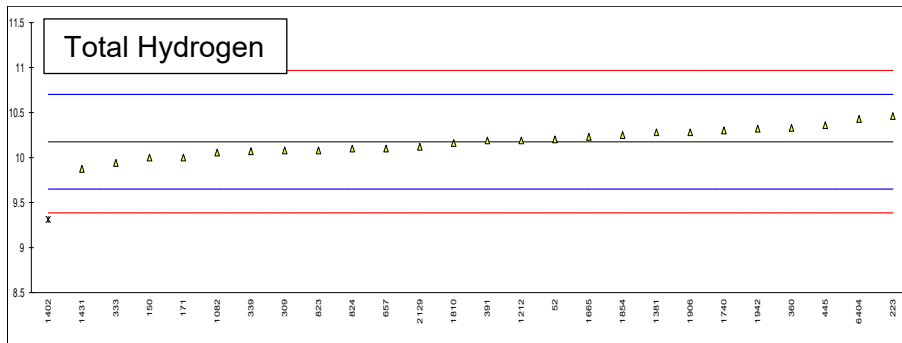
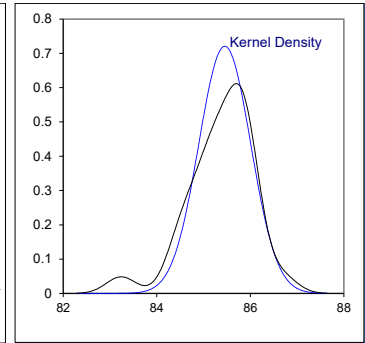
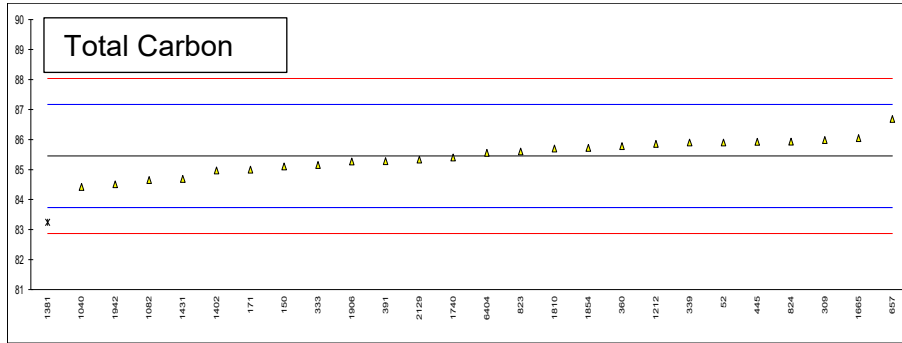
z-scores of Vacuum Distillation at 10 mmHg but reported as AET on sample #23275								
lab	IBP	5% rec	10% rec	20% rec	30% rec	40% rec	50% rec	FBP
52	----	----	----	----	----	----	----	----
120	----	----	----	----	----	----	----	----
150	----	----	----	----	----	----	----	----
154	----	----	----	----	----	----	----	----
159	----	----	----	----	----	----	----	----
169	----	----	----	----	----	----	----	----
171	1.49	0.38	-0.51	-3.16	-6.89	-8.23	-3.17	4.34
212	----	----	----	----	----	----	----	----
223	----	----	----	----	----	----	----	----
225	----	----	----	----	----	----	----	----
228	----	----	----	----	----	----	----	----
231	----	----	----	----	----	----	----	----
235	----	----	----	----	----	----	----	----
237	----	----	----	----	----	----	----	----
238	----	----	----	----	----	----	----	----
253	----	----	----	----	----	----	----	----
256	----	----	----	----	----	----	----	----
273	----	----	----	----	----	----	----	----
300	----	----	----	----	----	----	----	----
309	----	----	----	----	----	----	----	----
311	-0.22	0.59	0.26	-0.47	0.07	0.25	0.10	0.19
313	----	----	----	----	----	----	----	----
323	----	----	----	----	----	----	----	----
328	----	----	----	----	----	----	----	----
333	----	----	----	----	----	----	----	----
334	1.21	4.26	3.76	3.06	3.07	2.77	----	-1.68
339	----	----	----	----	----	----	----	----
342	----	----	----	----	----	----	----	----
349	----	----	----	----	----	----	----	----
352	----	----	----	----	----	----	----	----
360	0.24	-0.04	0.01	0.23	0.22	-0.12	----	-0.74
372	-0.28	-0.14	-0.51	-0.76	-0.57	-0.30	0.10	0.29
381	----	----	----	----	----	----	----	----
391	----	----	----	----	----	----	----	----
404	----	----	----	----	----	----	----	----
445	-1.12	-0.97	-0.50	-0.90	-0.88	-1.11	----	-1.69
447	----	----	----	----	----	----	----	----
455	----	----	----	----	----	----	----	----
467	----	----	----	----	----	----	----	----
507	----	----	----	----	----	----	----	----
541	----	----	----	----	----	----	----	----
551	----	----	----	----	----	----	----	----
575	----	----	----	----	----	----	----	----
621	----	----	----	----	----	----	----	----
633	----	----	----	----	----	----	----	----
634	----	----	----	----	----	----	----	----
657	-0.30	-0.31	-0.50	-0.51	-0.65	-0.57	-0.59	0.55
710	0.41	-0.56	-0.64	-0.19	-0.41	-0.30	-0.67	-0.74
736	0.13	-0.06	0.17	0.94	0.56	0.43	0.10	-0.22
752	----	----	----	----	----	----	----	----
753	-0.28	-0.56	-0.51	0.09	0.07	0.61	----	-1.26
778	----	----	----	----	----	----	----	----
781	-0.33	-0.24	0.13	-0.05	-0.09	-0.48	----	-0.64
785	-0.91	-1.27	-1.56	-0.94	-0.36	-0.46	----	----
798	----	----	----	----	----	----	----	----
823	----	----	----	----	----	----	----	----
824	----	----	----	----	----	----	----	----
825	----	----	----	----	----	----	----	----
840	----	----	----	----	----	----	----	----
872	----	----	----	----	----	----	----	----
873	-0.16	-0.24	-0.12	-0.19	0.07	-0.12	-0.67	-0.33
874	0.12	-0.04	0.01	0.16	0.07	-0.03	----	-0.54
875	-0.33	-0.61	-0.64	-0.90	-0.57	-0.48	----	----
887	----	----	----	----	----	----	----	----
904	----	----	----	----	----	----	----	----
962	----	----	----	----	----	----	----	----
963	----	----	----	----	----	----	----	----
971	0.21	0.75	0.41	0.22	0.10	0.17	----	-0.15
974	----	----	----	----	----	----	----	----
994	0.81	-0.56	-0.38	0.38	0.38	0.25	0.10	-0.02
995	-0.25	-0.56	-0.97	0.02	-0.65	-0.39	-1.72	-0.48
996	----	----	----	----	----	----	----	----
997	----	----	----	----	----	----	----	----
1011	----	----	----	----	----	----	----	----
1039	----	----	----	----	----	----	----	----
1040	----	----	----	----	----	----	----	----

z-scores of Vacuum Distillation at 10 mmHg but reported as AET on sample #23275								
lab	IBP	5% rec	10% rec	20% rec	30% rec	40% rec	50% rec	FBP
1059	----	----	----	----	----	----	----	----
1065	----	----	----	----	----	----	----	----
1082	----	----	----	----	----	----	----	----
1108	0.15	-0.39	-0.28	0.23	0.00	-0.35	-0.26	0.00
1121	----	----	----	----	----	----	----	----
1126	----	----	----	----	----	----	----	----
1134	----	----	----	----	----	----	----	----
1191	----	----	----	----	----	----	----	----
1205	----	----	----	----	----	----	----	----
1212	-0.12	0.97	0.78	0.60	0.56	0.50	0.35	0.04
1218	----	----	----	----	----	----	----	----
1259	----	----	----	----	----	----	----	----
1264	----	----	----	----	----	----	----	----
1297	----	----	----	----	----	----	----	----
1299	----	----	----	----	----	----	----	----
1320	----	----	----	----	----	----	----	----
1353	----	----	----	----	----	----	----	----
1356	----	----	----	----	----	----	----	----
1381	----	----	----	----	----	----	----	----
1402	1.09	1.43	1.43	0.38	0.07	0.61	1.84	2.37
1431	----	----	----	----	----	----	----	----
1438	----	----	----	----	----	----	----	----
1443	----	----	----	----	----	----	----	----
1585	-0.02	0.81	0.70	-0.03	0.05	0.19	0.10	0.12
1586	-0.34	0.30	0.39	0.74	1.30	1.58	----	0.43
1636	----	----	----	----	----	----	----	----
1648	-0.34	0.28	0.35	0.69	1.24	1.47	0.53	0.20
1665	----	----	----	----	----	----	----	----
1681	----	----	----	----	----	----	----	----
1720	----	----	----	----	----	----	----	----
1730	-0.91	-0.58	-1.08	-3.57	-4.11	-6.12	----	-4.78
1740	----	----	----	----	----	----	----	----
1741	----	----	----	----	----	----	----	----
1776	----	----	----	----	----	----	----	----
1810	----	----	----	----	----	----	----	----
1811	----	----	----	----	----	----	----	----
1854	----	----	----	----	----	----	----	----
1857	0.43	0.93	0.74	0.57	0.41	0.12	-0.47	-0.41
1862	0.52	0.38	0.39	0.09	-0.09	0.79	0.68	0.29
1906	----	----	----	----	----	----	----	----
1942	----	----	----	----	----	----	----	----
1949	0.35	0.59	0.52	0.09	0.07	0.07	0.10	0.09
1995	0.56	-1.48	-0.28	-3.05	-3.70	-1.49	1.28	1.67
2129	----	----	----	----	----	----	----	----
2146	----	----	----	----	----	----	----	----
6026	0.29	0.59	0.52	-0.05	-0.09	0.07	-0.28	0.19
6075	----	----	----	----	----	----	----	----
6092	----	----	----	----	----	----	----	----
6112	----	----	----	----	----	----	----	----
6114	----	----	----	----	----	----	----	----
6142	----	----	----	----	----	----	----	----
6143	----	----	----	----	----	----	----	----
6203	-0.32	0.38	0.07	-0.47	-0.87	-0.93	-0.63	0.78
6226	----	----	----	----	----	----	----	----
6238	----	----	----	----	----	----	----	----
6266	----	----	----	----	----	----	----	----
6319	----	----	----	----	----	----	----	----
6335	----	----	----	----	----	----	----	----
6364	----	----	----	----	----	----	----	----
6373	----	----	----	----	----	----	----	----
6404	----	----	----	----	----	----	----	----
6406	----	----	----	----	----	----	----	----
6438	----	----	----	----	----	----	----	----
6447	----	----	----	----	----	----	----	----
6505	----	----	----	----	----	----	----	----
6530	----	----	----	----	----	----	----	----
6563	----	----	----	----	----	----	----	----

Determination of Total Carbon, Hydrogen and Nitrogen on sample #23275; results in %M/M										
Lab	method	Total C	mark	z(targ)	Total H	mark	z(targ)	Total N	mark	z(targ)
52	D5291-B	85.9		0.52	10.2		0.09	----		----
120		----		----	----		----	----		----
150	D5291-C	85.1		-0.41	10.0		-0.67	----		----
154		----		----	----		----	----		----
159		----		----	----		----	----		----
169		----		----	----		----	----		----
171	D5291-D	85.0		-0.53	10.0		-0.67	0.91	R(0.01)	12.62
212		----		----	----		----	----		----
223	D5291-C	----		----	10.46		1.08	----		----
225		----		----	----		----	----		----
228		----		----	----		----	----		----
231		----		----	----		----	----		----
235		----		----	----		----	----		----
237		----		----	----		----	----		----
238		----		----	----		----	----		----
253		----		----	----		----	----		----
256		----		----	----		----	----		----
273		----		----	----		----	----		----
300		----		----	----		----	----		----
309	D5291-C	85.98		0.61	10.08		-0.36	0.47		0.58
311		----		----	----		----	----		----
313		----		----	----		----	----		----
323		----		----	----		----	----		----
328		----		----	----		----	----		----
333	D5291-A	85.15		-0.35	9.94		-0.90	0.51		1.67
334		----		----	----		----	----		----
339	D5291-D	85.9		0.52	10.07		-0.40	0.43		-0.52
342		----		----	----		----	----		----
349		----		----	----		----	----		----
352		----		----	----		----	----		----
360	D5291-A	85.78		0.38	10.33		0.58	0.44		-0.24
372		----		----	----		----	----		----
381		----		----	----		----	----		----
391	D5291-A	85.28		-0.20	10.19		0.05	0.69	R(0.01)	6.60
404		----		----	----		----	----		----
445	D5291-D	85.92		0.54	10.36		0.70	0.44		-0.24
447		----		----	----		----	----		----
455		----		----	----		----	----		----
467		----		----	----		----	----		----
507		----		----	----		----	----		----
541		----		----	----		----	----		----
551		----		----	----		----	----		----
575		----		----	----		----	----		----
621		----		----	----		----	----		----
633		----		----	----		----	----		----
634		----		----	----		----	----		----
657	D5291-D	86.685		1.43	10.1		-0.29	0.46		0.30
710		----		----	----		----	----		----
736		----		----	----		----	----		----
752		----		----	----		----	----		----
753		----		----	----		----	----		----
778		----		----	----		----	----		----
781		----		----	----		----	----		----
785		----		----	----		----	----		----
798		----		----	----		----	----		----
823	D5291-D	85.60		0.17	10.08		-0.36	0.43		-0.52
824	D5291-D	85.93		0.55	10.10		-0.29	0.40		-1.34
825		----		----	----		----	----		----
840		----		----	----		----	----		----
872		----		----	----		----	----		----
873		----		----	----		----	----		----
874		----		----	----		----	----		----
875		----		----	----		----	----		----
887		----		----	----		----	----		----
904		----		----	----		----	----		----
962		----		----	----		----	----		----
963		----		----	----		----	----		----
971		----		----	----		----	----		----
974		----		----	----		----	----		----
994		----		----	----		----	----		----
995		----		----	----		----	----		----
996		----		----	----		----	----		----
997		----		----	----		----	----		----
1011		----		----	----		----	----		----
1039		----		----	----		----	----		----
1040	D7662	84.42		-1.20	----		----	----		----

Determination of Total Carbon, Hydrogen and Nitrogen on sample #23275; results in %M/M										
Lab	method	Total C	mark	z(targ)	Total H	mark	z(targ)	Total N	mark	z(targ)
1059		----		----	----		----	----		----
1065		----		----	----		----	----		----
1082	D5291-C	84.65		-0.93	10.055		-0.46	0.327		-3.34
1108		----		----	----		----	----		----
1121		----		----	----		----	----		----
1126		----		----	----		----	----		----
1134		----		----	----		----	----		----
1191		----		----	----		----	----		----
1205		----		----	----		----	----		----
1212	D5291-D	85.86		0.47	10.19		0.05	0.433		-0.44
1218		----		----	----		----	----		----
1259		----		----	----		----	----		----
1264		----		----	----		----	----		----
1297		----		----	----		----	----		----
1299		----		----	----		----	----		----
1320		----		----	----		----	----		----
1353		----		----	----		----	----		----
1356		----		----	----		----	----		----
1381		83.24	R(0.05)	-2.57	10.28		0.39	----		----
1402	D5291-C	84.97		-0.56	9.31	R(0.01)	-3.28	----		----
1431		84.69		-0.89	9.875		-1.14	0.466		0.47
1438		----		----	----		----	----		----
1443		----		----	----		----	----		----
1585		----		----	----		----	----		----
1586		----		----	----		----	----		----
1636		----		----	----		----	----		----
1648		----		----	----		----	----		----
1665	ISO12902	86.05		0.69	10.23		0.20	0.55		2.77
1681		----		----	----		----	----		----
1720		----		----	----		----	----		----
1730		----		----	----		----	----		----
1740	D5291-C	85.4		-0.06	10.3		0.47	0.43		-0.52
1741		----		----	----		----	----		----
1776		----		----	----		----	----		----
1810	D5291-A	85.7		0.29	10.16		-0.06	----		----
1811		----		----	----		----	----		----
1854	D5291-C	85.72		0.31	10.25		0.28	0.43		-0.52
1857		----		----	----		----	----		----
1862		----		----	----		----	----		----
1906		85.270		-0.21	10.280		0.39	0.485		0.99
1942	D5291-D	84.51		-1.10	10.32		0.55	0.45		0.03
1949		----		----	----		----	----		----
1995		----		----	----		----	----		----
2129	D5291-D	85.33		-0.14	10.12		-0.21	0.49		1.12
2146		----		----	----		----	----		----
6026		----		----	----		----	----		----
6075		----		----	----		----	----		----
6092		----		----	----		----	----		----
6112		----		----	----		----	----		----
6114		----		----	----		----	----		----
6142		----		----	----		----	----		----
6143		----		----	----		----	----		----
6203		----		----	----		----	----		----
6226		----		----	----		----	----		----
6238		----		----	----		----	----		----
6266		----		----	----		----	----		----
6319		----		----	----		----	----		----
6335		----		----	----		----	----		----
6364		----		----	----		----	----		----
6373		----		----	----		----	----		----
6404	D5291-D	85.56		0.12	10.43		0.96	0.44		-0.24
6406		----		----	----		----	----		----
6438		----		----	----		----	----		----
6447		----		----	----		----	----		----
6505		----		----	----		----	----		----
6530		----		----	----		----	----		----
6563		----		----	----		----	----		----

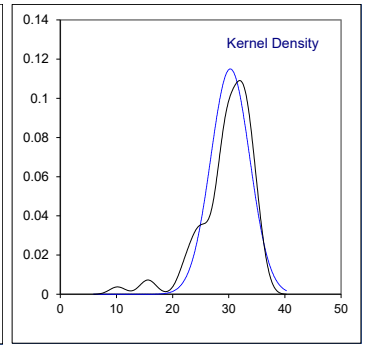
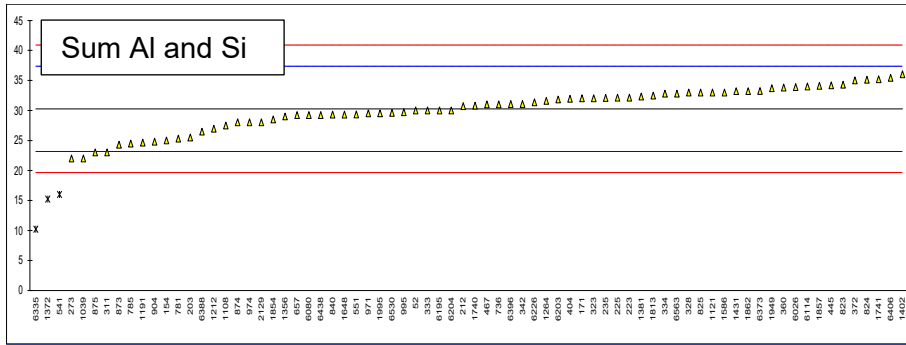
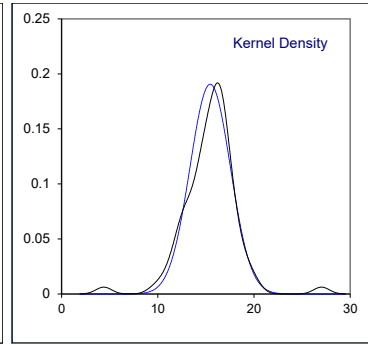
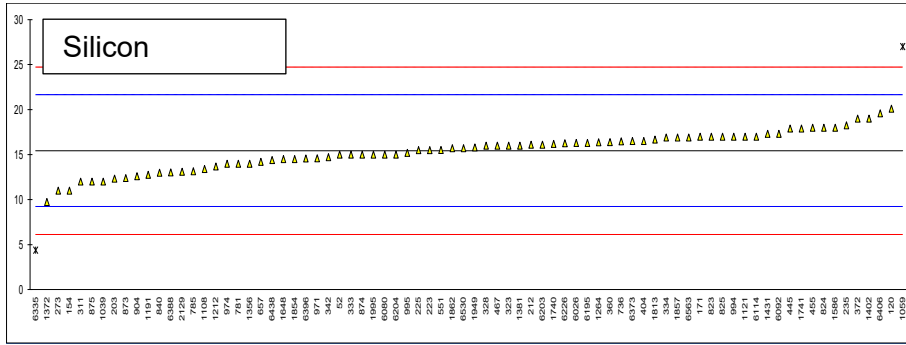
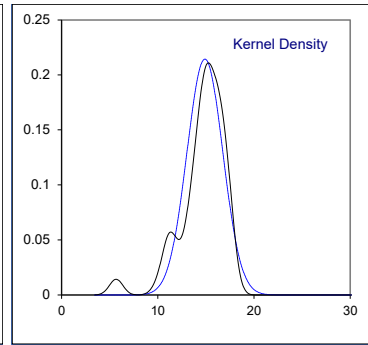
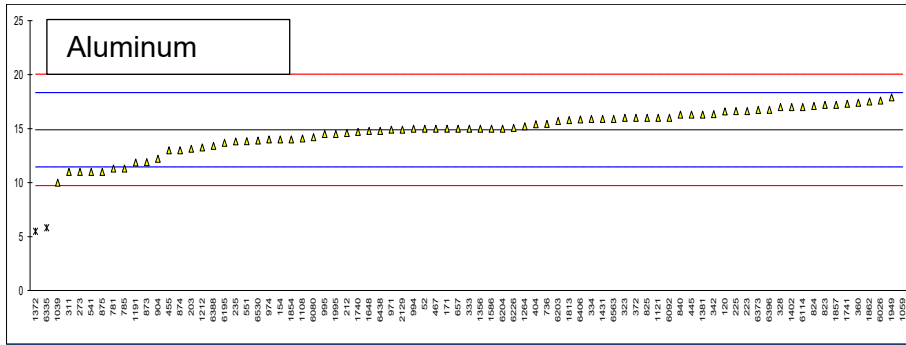
Determination of Total Carbon, Hydrogen and Nitrogen on sample #23275; results in %M/M						
	Total C		Total H		Total N	
normality	OK		OK		not OK	
n	25		25		18	
outliers	1		1		2	
mean (n)	85.4542		10.1760		0.4489	
st.dev. (n)	0.55357		0.14963		0.04664	
R(calc.)	1.5500		0.4190		0.1306	
st.dev.(D5291:21)	0.86101		0.26363		0.03655	
R(D5291:21)	2.4108		0.7382		0.1023	
	procedure ABC		procedure ABC		procedure D	
	procedure ABC		procedure ABC		procedure D	



Determination of Aluminum as Al, Silicon as Si, Sum Al and Si on sample #23276; results in mg/kg										
lab	method	Al	mark	z(targ)	Si	mark	z(targ)	Al + Si	mark	z(targ)
52	IP501	15		0.06	15		-0.14	30		-0.08
120	IP501	16.59		0.99	20.10		1.51	----		----
150		----		----	----		----	----		----
154	IP501	14		-0.52	11		-1.43	25		-1.49
159		----		----	----		----	----		----
169		----		----	----		----	----		----
171	IP501	15		0.06	17		0.51	32		0.49
203	D5184-B	13.14		-1.02	12.34		-1.00	25.48		-1.35
212	IP501	14.6		-0.17	16.1		0.22	30.7		0.12
223	IP501	16.63		1.01	15.50		0.02	32.13		0.52
225	IP501	16.63		1.01	15.50		0.02	32.13		0.52
228		----		----	----		----	----		----
235	IP501	13.82		-0.62	18.25		0.91	32.07		0.51
237		----		----	----		----	----		----
273	IP501	11		-2.26	11		-1.43	22		-2.33
300		----		----	----		----	----		----
311	IP501	11	C	-2.26	12	C	-1.11	23	C	-2.05
323	IP501	16		0.65	16		0.18	32		0.49
328	IP501	17		1.23	16		0.18	33		0.77
333	IP501	15		0.06	15		-0.14	30		-0.08
334	IP501	15.9		0.59	16.9		0.47	32.8		0.71
342	IP501	16.345		0.85	14.716		-0.23	31.061		0.22
352		----		----	----		----	----		----
360	IP501	17.4		1.46	16.4		0.31	33.8		0.99
372	IP470	16.0		0.65	19	C	1.15	35	C	1.33
381		----		----	----		----	----		----
404	IP470	15.42		0.31	16.5		0.34	31.92		0.46
445	IP470	16.3		0.82	17.9		0.80	34.2		1.11
447		----		----	----		----	----		----
455	IP501	13		-1.10	18		0.83	----		----
467	IP501	15		0.06	16		0.18	31		0.20
507		----		----	----		----	----		----
541	IP501	11		-2.26	<10		----	16	R(0.01)	-4.03
551	IP501	13.84		-0.61	15.52		0.03	29.32		-0.27
634		----		----	----		----	----		----
657	IP501	15.0		0.06	14.2		-0.40	29.2		-0.30
736	IP501	15.44		0.32	16.47		0.33	31		0.20
750		----		----	----		----	----		----
781	IP501	11.3		-2.09	14.0		-0.46	25.3		-1.40
785	IP470	11.31		-2.08	13.16		-0.73	24.47		-1.64
798		----		----	----		----	----		----
823	IP501	17.2		1.34	17.0		0.51	34.3		1.13
824	IP501	17.1		1.28	18.0		0.83	35.1		1.36
825	IP501	16		0.65	17		0.51	33		0.77
840	IP501	16.3		0.82	13.0		-0.78	29.3		-0.28
873	IP470	11.9		-1.74	12.4		-0.98	24.3		-1.68
874	IP501	13		-1.10	15		-0.14	28		-0.64
875	IP501	11		-2.26	12		-1.11	23		-2.05
904	IP501	12.2		-1.56	12.6		-0.91	24.8		-1.54
963		----		----	----		----	----		----
971	IP501	14.9		0.01	14.6		-0.27	29.5		-0.22
974	IP501	14		-0.52	14		-0.46	28		-0.64
994	IP501	15		0.06	17		0.51	----		----
995	IP470	14.5		-0.23	15.2		-0.08	29.7		-0.16
1011		----		----	----		----	----		----
1039	IP501	10		-2.84	12		-1.11	22		-2.33
1059	In house	40	R(0.01)	14.59	27	R(0.01)	3.73	----		----
1065		----		----	----		----	----		----
1108	IP470	14.1		-0.46	13.4		-0.66	27.5		-0.78
1121	IP501	16.0		0.65	17.0		0.51	33.0		0.77
1134		----		----	----		----	----		----
1191	ISO10478	11.86		-1.76	12.77		-0.86	24.63		-1.59
1212	IP501	13.26		-0.95	13.68		-0.57	26.94		-0.94
1264	IP501	15.215		0.19	16.379		0.31	31.594		0.37
1299		----		----	----		----	----		----
1356	ISO10478	15		0.06	14		-0.46	29		-0.36
1372	IP501	5.50	R(0.01)	-5.46	9.74		-1.84	15.24	R(0.01)	-4.24
1381	IP501	16.3		0.82	16.0		0.18	32.3		0.57
1402	IP501	17		1.23	19		1.15	36		1.61
1431	IP501	15.9		0.59	17.3		0.60	33.2		0.82
1586	IP470	15		0.06	18		0.83	33		0.77
1648	IP501	14.8		-0.05	14.5		-0.30	29.3		-0.28
1720		----		----	----		----	----		----
1740	ISO10478	14.7		-0.11	16.2		0.25	30.8		0.15
1741	IP501	17.3		1.40	17.9		0.80	35.2		1.39

Determination of Aluminum as Al, Silicon as Si, Sum Al and Si on sample #23276; results in mg/kg										
lab	method	Al	mark	z(targ)	Si	mark	z(targ)	Al + Si	mark	z(targ)
1776		----		----	----		----	----		----
1813	IP501	15.8083		0.53	16.6764		0.40	32.4847		0.62
1854	IP501	14.		-0.52	14.5		-0.30	28.5		-0.50
1857	IP501	17.2		1.34	16.9		0.47	34.1		1.08
1862	IP501	17.5		1.52	15.7		0.09	33.2		0.82
1949	IP470	17.9		1.75	15.8		0.12	33.7		0.97
1995	IP501	14.5		-0.23	15		-0.14	29.5		-0.22
2129	IP470	14.9		0.01	13.1		-0.75	28.0		-0.64
6026	IP470	17.6		1.57	16.3		0.28	33.9		1.02
6075		----		----	----		----	----		----
6080	IP501	14.2		-0.40	15.0		-0.14	29.2		-0.30
6092	IP501	16.0		0.65	17.3		0.60	----		----
6114	IP501	17		1.23	17	C	0.51	34	C	1.05
6142		----		----	----		----	----		----
6143		----		----	----		----	----		----
6195	IP501	13.7		-0.69	16.3		0.28	30.0		-0.08
6203	IP501	15.715		0.48	16.10		0.22	31.82	C	0.44
6204	IP501	15		0.06	15		-0.14	30		-0.08
6226	IP501	15.08		0.11	16.27		0.27	31.35		0.30
6238		----		----	----		----	----		----
6335	D5185	5.82	R(0.01)	-5.27	4.37	R(0.01)	-3.57	10.19	R(0.01)	-5.66
6373	IP501	16.7255		1.07	16.4995		0.34	33.2250		0.83
6388	IP501	13.42		-0.85	13.03		-0.77	26.45		-1.08
6396	IP501	16.74		1.08	14.58		-0.27	31.05		0.22
6406	IP501	15.85		0.56	19.60		1.34	35.45		1.46
6438	IP501	14.8		-0.05	14.4		-0.33	29.2		-0.30
6530	IP470	13.9		-0.58	15.7		0.09	29.6		-0.19
6563	IP501	15.9		0.59	16.9		0.47	32.8		0.71
	normality	OK			OK			OK		
	n	76			76			71		
	outliers	3			2			3		
	mean (n)	14.89			15.43			30.28		
	st.dev. (n)	1.861			2.093			3.470		
	R(calc.)	5.21			5.86			9.72		
	st.dev.(IP470:05)	1.721			3.101			3.546		
	R(IP470:05)	4.82			8.68			9.93		
	compare									
	R(IP501:05:R19)	5.02			5.12			7.17		

Lab 311 first reported 9, 11 and 20 respectively
 Lab 372 first reported 25.6 and 42 respectively
 Lab 6114 first reported 24 and 41 respectively
 Lab 6203 first reported 15.908

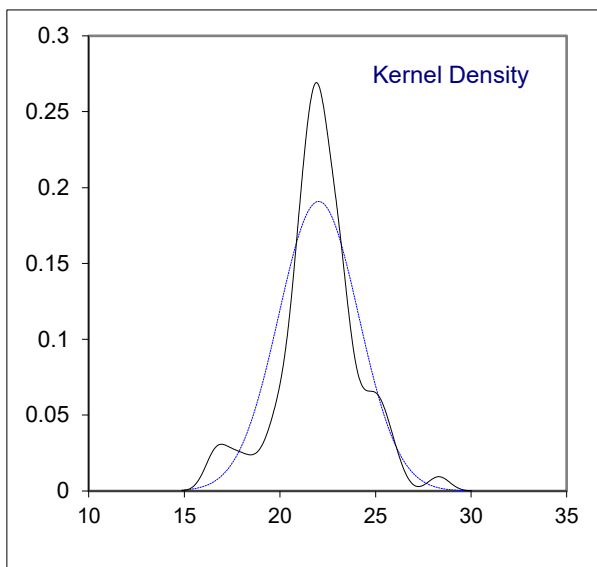
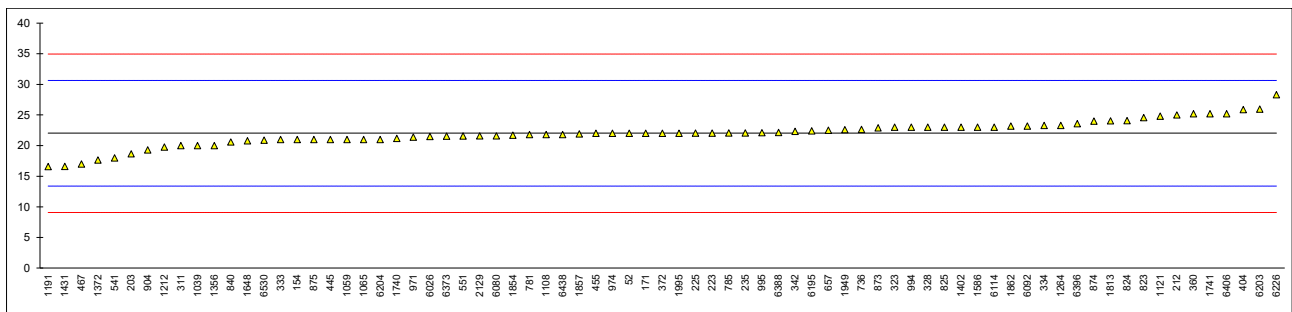


Determination of Iron as Fe on sample #23276; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
52	IP501	22		-0.01	
120		----		----	
150		----		----	
154	IP501	21		-0.24	
159		----		----	
169		----		----	
171	IP501	22		-0.01	
203	D5863	18.67		-0.78	
212	IP501	25.0		0.69	
223	IP501	22.03		0.00	
225	IP501	22.03		0.00	
228		----		----	
235	IP501	22.07		0.01	
237		----		----	
273		----		----	
300		----		----	
311	IP501	20		-0.47	
323	IP501	23		0.23	
328	IP501	23		0.23	
333	IP501	21		-0.24	
334	IP501	23.3		0.30	
342	IP501	22.324		0.07	
352		----		----	
360	IP501	25.2		0.74	
372	IP470	22.0		-0.01	
381		----		----	
404	IP470	25.88		0.89	
445	IP470	21.0		-0.24	
447		----		----	
455	IP501	22		-0.01	
467	IP501	17		-1.17	
507		----		----	
541	IP501	18		-0.93	
551	IP501	21.57		-0.11	
634		----		----	
657	IP501	22.5		0.11	
736	IP501	22.66		0.15	
750		----		----	
781	IP501	21.8		-0.05	
785	IP470	22.05		0.01	
798		----		----	
823	IP501	24.6		0.60	
824	IP501	24.1		0.48	
825	IP501	23		0.23	
840	IP501	20.6		-0.33	
873	IP470	22.9		0.20	
874	IP501	24		0.46	
875	IP501	21		-0.24	
904	IP501	19.3		-0.63	
963		----		----	
971	IP501	21.4		-0.15	
974	IP501	22		-0.01	
994	IP501	23		0.23	
995	IP470	22.1		0.02	
1011		----		----	
1039	IP501	20		-0.47	
1059	In house	21		-0.24	
1065	D5863-A	21		-0.24	
1108	IP470	21.8		-0.05	
1121	IP501	24.8		0.64	
1134		----		----	
1191	ISO10478Mod.	16.57		-1.27	
1212	IP501	19.77		-0.52	
1264	IP501	23.308		0.30	
1299		----		----	
1356	IP501	20		-0.47	
1372	D5708	17.65		-1.02	
1381		----		----	
1402	IP501	23		0.23	
1431	IP501	16.6		-1.26	
1586	IP470	23		0.23	
1648	IP501	20.8		-0.28	
1720		----		----	
1740	IP501	21.2		-0.19	
1741	IP501	25.2		0.74	
1776	IP501	<1,0		<-4.88	possibly a false negative test result?

Determination of Iron as Fe on sample #23276; results in mg/kg

lab	method	value	mark	z(targ)	remarks
1813	IP501	24.0506		0.47	
1854	IP501	21.7		-0.08	
1857	IP501	21.9		-0.03	
1862	IP501	23.2		0.27	
1949	IP470	22.6		0.13	
1995	IP501	22		-0.01	
2129	IP470	21.6		-0.10	
6026	IP470	21.5		-0.12	
6075		----		----	
6080	IP501	21.6		-0.10	
6092	IP501	23.2		0.27	
6114	IP501	23		0.23	
6142		----		----	
6143		----		----	
6195	IP501	22.4		0.09	
6203	IP501	25.960		0.91	
6204	IP501	21		-0.24	
6226	IP501	28.31	C	1.46	first reported 30.79
6238		----		----	
6335		----		----	
6373	IP501	21.5375		-0.11	
6388	IP501	22.15		0.03	
6396	IP501	23.59		0.36	
6406	IP501	25.21		0.74	
6438	IP501	21.8		-0.05	
6530	IP470	20.9		-0.26	
6563		----		----	

normality suspect
n 75
outliers 0
mean (n) 22.03
st.dev. (n) 2.090
R(calc.) 5.85
st.dev.(IP470:05) 4.309
R(IP470:05) 12.07
compare
R(IP501:05:R19) 5.14

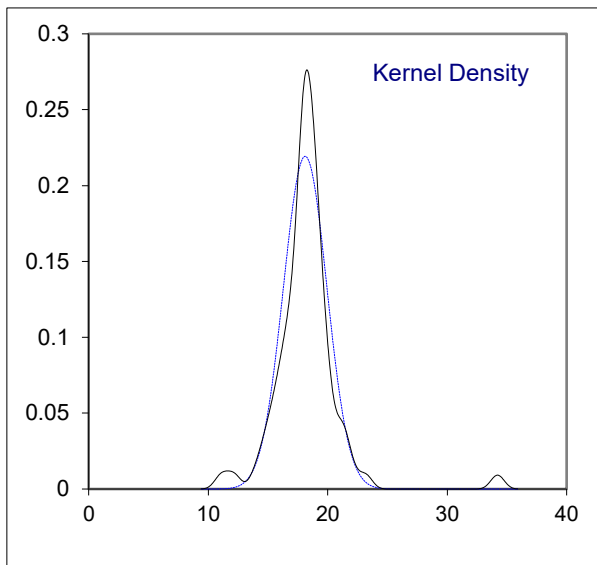
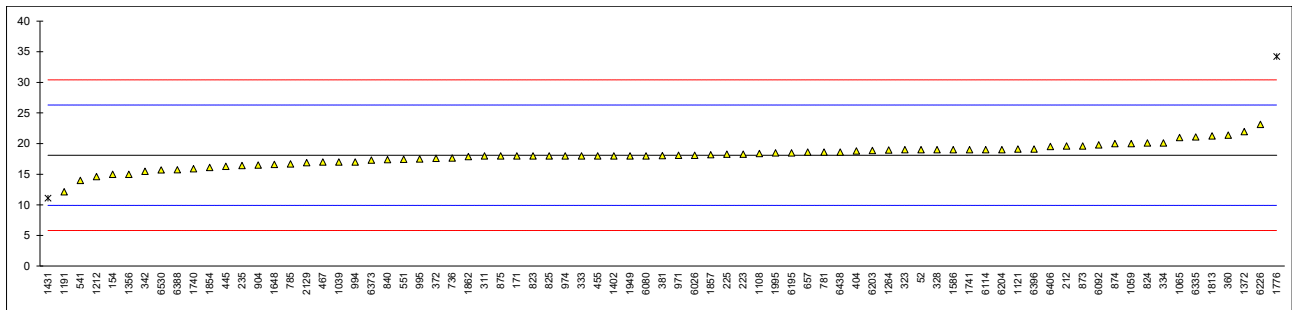


Determination of Nickel as Ni on sample #23276; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
52	IP501	19		0.22	
120		----		----	
150		----		----	
154	IP501	15		-0.76	
159		----		----	
169		----		----	
171	IP501	18		-0.02	
203		----		----	
212	IP501	19.6		0.37	
223	IP501	18.29		0.05	
225	IP501	18.29		0.05	
228		----		----	
235	IP501	16.44		-0.41	
237		----		----	
273		----		----	
300		----		----	
311	IP501	18		-0.02	
323	IP501	19		0.22	
328	IP501	19		0.22	
333	IP501	18		-0.02	
334	IP501	20.1		0.49	
342	IP501	15.480		-0.64	
352		----		----	
360	IP501	21.4		0.81	
372	IP470	17.6		-0.12	
381	IP501	18.05		-0.01	
404	IP470	18.8		0.17	
445	IP470	16.3		-0.44	
447		----		----	
455	IP501	18		-0.02	
467	IP501	17		-0.27	
507		----		----	
541	IP501	14		-1.00	
551	IP501	17.45		-0.16	
634		----		----	
657	IP501	18.6		0.12	
736	IP501	17.64		-0.11	
750		----		----	
781	IP501	18.6		0.12	
785	IP470	16.68		-0.35	
798		----		----	
823	IP501	18.0		-0.02	
824	IP501	20.1		0.49	
825	IP501	18		-0.02	
840	IP501	17.4		-0.17	
873	IP470	19.6		0.37	
874	IP501	20		0.46	
875	IP501	18		-0.02	
904	IP501	16.5		-0.39	
963		----		----	
971	IP501	18.1		0.00	
974	IP501	18		-0.02	
994	IP501	17		-0.27	
995	IP470	17.5		-0.15	
1011		----		----	
1039	IP501	17		-0.27	
1059	In house	20		0.46	
1065	D5863-A	21		0.71	
1108	IP470	18.4		0.07	
1121	IP501	19.1		0.24	
1134		----		----	
1191	ISO10478Mod.	12.145		-1.45	
1212	IP501	14.61		-0.85	
1264	IP501	18.970		0.21	
1299		----		----	
1356	IP501	15		-0.76	
1372	D5708	21.97		0.94	
1381		----		----	
1402	IP501	18		-0.02	
1431	IP501	11.1	R(0.05)	-1.71	
1586	IP470	19		0.22	
1648	IP501	16.6		-0.37	
1720		----		----	
1740	IP501	15.9		-0.54	
1741	IP501	19.0		0.22	
1776	IP501	34.2	R(0.01)	3.93	

Determination of Nickel as Ni on sample #23276; results in mg/kg

lab	method	value	mark	z(target)	remarks
1813	IP501	21.2658		0.77	
1854	IP501	16.1		-0.49	
1857	IP501	18.2		0.02	
1862	IP501	17.9		-0.05	
1949	IP470	18.0		-0.02	
1995	IP501	18.5		0.10	
2129	IP470	16.9		-0.29	
6026	IP470	18.1		0.00	
6075		-----		-----	
6080	IP501	18.0		-0.02	
6092	IP501	19.8		0.41	
6114	IP501	19		0.22	
6142		-----		-----	
6143		-----		-----	
6195	IP501	18.5		0.10	
6203	IP501	18.895		0.19	
6204	IP501	19		0.22	
6226	IP501	23.15		1.23	
6238		-----		-----	
6335	D5185	21.08		0.73	
6373	IP501	17.3340		-0.19	
6388	IP501	15.74		-0.58	
6396	IP501	19.11		0.25	
6406	IP501	19.52		0.35	
6438	IP501	18.6		0.12	
6530	IP470	15.7		-0.59	
6563		-----		-----	

normality suspect
n 75
outliers 2
mean (n) 18.10
st.dev. (n) 1.820
R(calc.) 5.10
st.dev.(IP470:05) 4.097
R(IP470:05) 11.47
compare
R(IP501:05:R19) 8.27

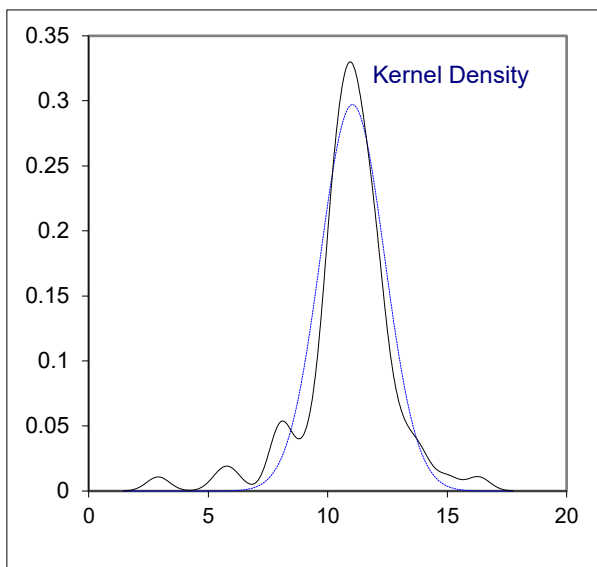
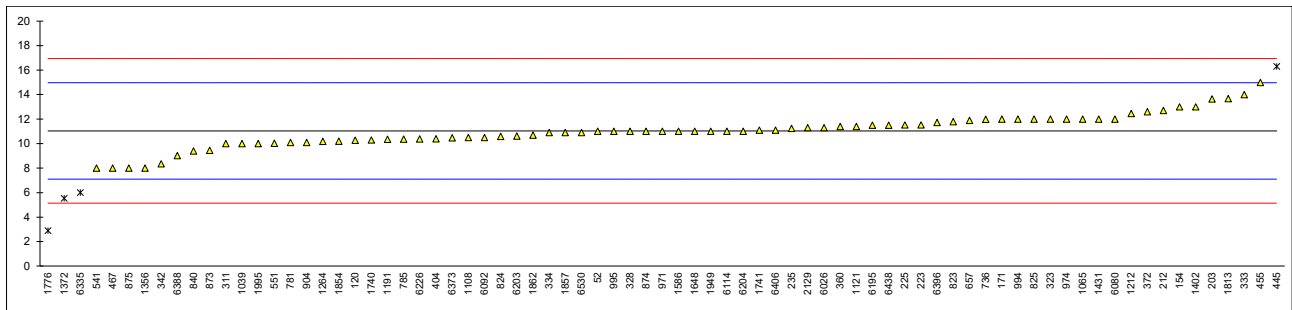


Determination of Sodium as Na on sample #23276; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
52	IP501	11		-0.02	
120	IP501	10.27		-0.39	
150		----		----	
154	IP501	13		1.00	
159		----		----	
169		----		----	
171	IP501	12		0.49	
203	D5863	13.64	C	1.33	first reported 7.03
212	IP501	12.7		0.85	
223	IP501	11.53		0.25	
225	IP501	11.53		0.25	
228		----		----	
235	IP501	11.24		0.11	
237		----		----	
273		----		----	
300		----		----	
311	IP501	10		-0.53	
323	IP501	12		0.49	
328	IP501	11		-0.02	
333	IP501	14		1.51	
334	IP501	10.9		-0.07	
342	IP501	8.350		-1.37	
352		----		----	
360	IP501	11.4		0.19	
372	IP470	12.6		0.80	
381		----		----	
404	IP470	10.4		-0.32	
445	IP470	16.3	R(0.05)	2.68	
447		----		----	
455	IP501	15		2.02	
467	IP501	8		-1.54	
507		----		----	
541	IP501	8		-1.54	
551	IP501	10.03		-0.51	
634		----		----	
657	IP501	11.9		0.44	
736	IP501	11.99		0.49	
750		----		----	
781	IP501	10.1		-0.47	
785	IP470	10.37		-0.34	
798		----		----	
823	IP501	11.8		0.39	
824	IP501	10.6		-0.22	
825	IP501	12		0.49	
840	IP501	9.4	C	-0.83	first reported 15.4
873	IP470	9.45		-0.81	
874	IP501	11		-0.02	
875	IP501	8		-1.54	
904	IP501	10.1		-0.47	
963		----		----	
971	IP501	11.0		-0.02	
974	IP501	12		0.49	
994	IP501	12		0.49	
995	IP470	11.0		-0.02	
1011		----		----	
1039	IP501	10		-0.53	
1059		----		----	
1065	D5863-B	12		0.49	
1108	IP470	10.5		-0.27	
1121	IP501	11.4		0.19	
1134		----		----	
1191	ISO10478Mod.	10.365		-0.34	
1212	IP501	12.45		0.72	
1264	IP501	10.182		-0.43	
1299		----		----	
1356	IP501	8		-1.54	
1372	IP501	5.54	R(0.05)	-2.80	
1381		----		----	
1402	IP501	13		1.00	
1431	IP501	12.0		0.49	
1586	IP470	11		-0.02	
1648	IP501	11.0		-0.02	
1720		----		----	
1740	IP501	10.3		-0.37	
1741	IP501	11.1		0.03	
1776	IP501	2.9	R(0.01)	-4.14	

Determination of Sodium as Na on sample #23276; results in mg/kg

lab	method	value	mark	z(target)	remarks
1813	IP501	13.6709		1.34	
1854	IP501	10.2		-0.42	
1857	IP501	10.9		-0.07	
1862	IP501	10.7		-0.17	
1949	IP470	11.0		-0.02	
1995	IP501	10		-0.53	
2129	IP470	11.3		0.14	
6026	IP470	11.3		0.14	
6075		----		----	
6080	IP501	12.0		0.49	
6092	IP501	10.5		-0.27	
6114	IP501	11		-0.02	
6142		----		----	
6143		----		----	
6195	IP501	11.5		0.24	
6203	IP501	10.615		-0.21	
6204	IP501	11		-0.02	
6226	IP501	10.39		-0.33	
6238		----		----	
6335	D5185	6.01	R(0.05)	-2.56	
6373	IP501	10.4675		-0.29	
6388	IP501	9.016		-1.03	
6396	IP501	11.73		0.35	
6406	IP501	11.1		0.03	
6438	IP501	11.5		0.24	
6530	IP470	10.9		-0.07	
6563		----		----	

normality suspect
n 73
outliers 4
mean (n) 11.03
st.dev. (n) 1.342
R(calc.) 3.76
st.dev.(IP470:05) 1.965
R(IP470:05) 5.50
compare
R(IP501:05:R19) 4.00

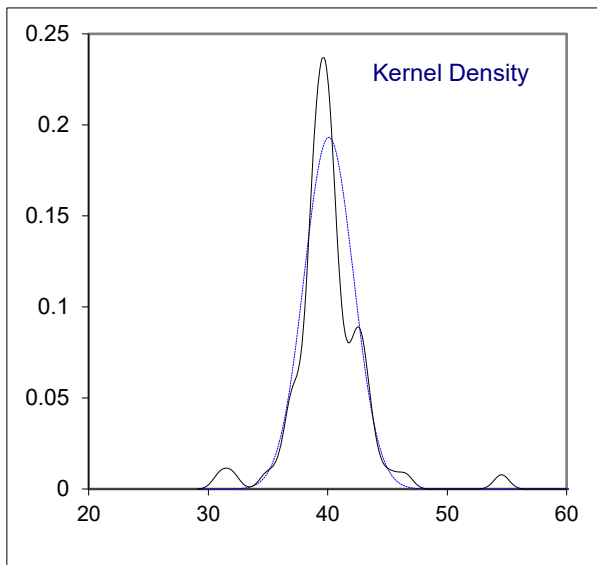
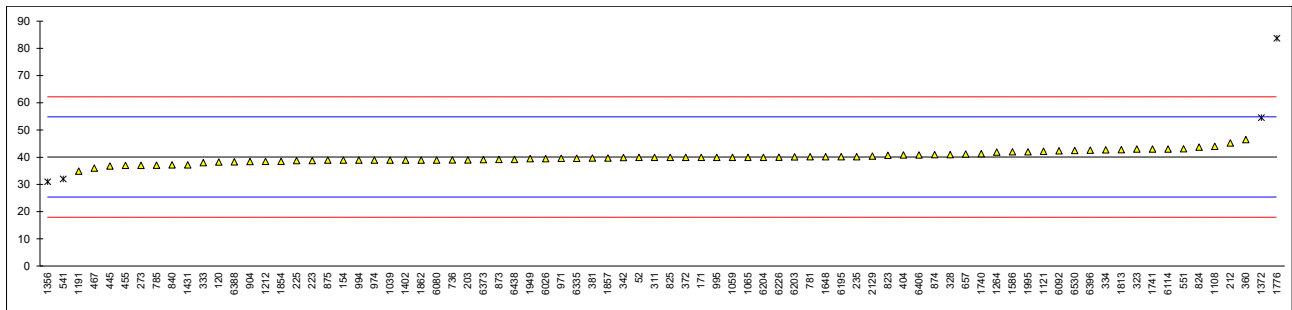


Determination of Vanadium as V on sample #23276; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
52	IP501	40		-0.01	
120	IP501	38.23		-0.25	
150		----		----	
154	IP501	39		-0.15	
159		----		----	
169		----		----	
171	IP501	40		-0.01	
203	D5863	39.04		-0.14	
212	IP501	45.2		0.69	
223	IP501	38.83		-0.17	
225	IP501	38.83		-0.17	
228		----		----	
235	IP501	40.21		0.02	
237		----		----	
273	IP501	37		-0.42	
300		----		----	
311	IP501	40		-0.01	
323	IP501	43		0.40	
328	IP501	41		0.12	
333	IP501	38		-0.28	
334	IP501	42.7		0.35	
342	IP501	39.941		-0.02	
352		----		----	
360	IP501	46.5		0.87	
372	IP470	40		-0.01	
381	IP501	39.7		-0.05	
404	IP470	40.8		0.10	
445	IP470	36.8		-0.45	
447		----		----	
455	IP501	37		-0.42	
467	IP501	36		-0.55	
507		----		----	
541	IP501	32	R(0.05)	-1.10	
551	IP501	43.13		0.41	
634		----		----	
657	IP501	41.2		0.15	
736	IP501	39.03		-0.14	
750		----		----	
781	IP501	40.2		0.02	
785	IP470	37.05		-0.41	
798		----		----	
823	IP501	40.7		0.08	
824	IP501	43.7		0.49	
825	IP501	40		-0.01	
840	IP501	37.2		-0.39	
873	IP470	39.2		-0.12	
874	IP501	41		0.12	
875	IP501	39		-0.15	
904	IP501	38.4		-0.23	
963		----		----	
971	IP501	39.6		-0.07	
974	IP501	39		-0.15	
994	IP501	39		-0.15	
995	IP470	40.0		-0.01	
1011		----		----	
1039	IP501	39		-0.15	
1059	In house	40		-0.01	
1065	D5863-A	40		-0.01	
1108	IP470	44.0		0.53	
1121	IP501	42.2		0.29	
1134		----		----	
1191	ISO10478Mod.	34.88		-0.71	
1212	IP501	38.49		-0.22	
1264	IP501	41.873		0.24	
1299		----		----	
1356	IP501	31	R(0.05)	-1.23	
1372	D5708	54.55	R(0.01)	1.96	
1381		----		----	
1402	IP501	39		-0.15	
1431	IP501	37.2		-0.39	
1586	IP470	42		0.26	
1648	IP501	40.2		0.02	
1720		----		----	
1740	IP501	41.3		0.16	
1741	IP501	43.0		0.40	
1776	IP501	83.7	R(0.01)	5.92	

Determination of Vanadium as V on sample #23276; results in mg/kg

lab	method	value	mark	z(target)	remarks
1813	IP501	42.7848		0.37	
1854	IP501	38.5		-0.22	
1857	IP501	39.7		-0.05	
1862	IP501	39.0		-0.15	
1949	IP470	39.5		-0.08	
1995	IP501	42		0.26	
2129	IP470	40.4		0.04	
6026	IP470	39.5		-0.08	
6075		----		----	
6080	IP501	39.0		-0.15	
6092	IP501	42.4		0.31	
6114	IP501	43		0.40	
6142		----		----	
6143		----		----	
6195	IP501	40.2		0.02	
6203	IP501	40.16		0.01	
6204	IP501	40		-0.01	
6226	IP501	40.01		-0.01	
6238		----		----	
6335	D5185	39.60		-0.07	
6373	IP501	39.1580		-0.13	
6388	IP501	38.32		-0.24	
6396	IP501	42.61		0.34	
6406	IP501	40.80		0.10	
6438	IP501	39.2		-0.12	
6530	IP470	42.5		0.33	
6563		----		----	

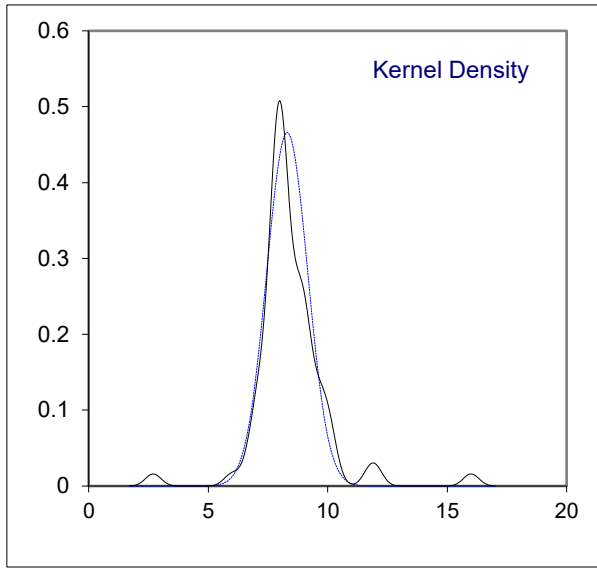
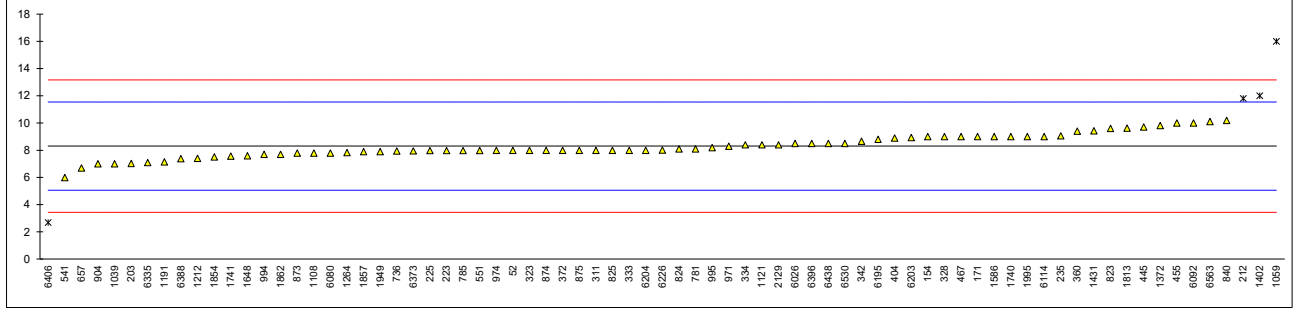
normality OK
n 76
outliers 4
mean (n) 40.09
st.dev. (n) 2.066
R(calc.) 5.78
st.dev.(IP470:05) 7.372
R(IP470:05) 20.64
compare
R(IP501:05:R19) 15.38



Determination of Calcium as Ca on sample #23276; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
52	IP501	8		-0.19	
120		----		----	
150		----		----	
154	IP501	9		0.43	
159		----		----	
169		----		----	
171	IP501	9		0.43	
203	D3605	7.03		-0.79	
212	IP501	11.8	C,R(0.01)	2.16	first reported 3.8
223	IP501	7.97		-0.21	
225	IP501	7.97		-0.21	
228		----		----	
235	IP501	9.06		0.46	
237		----		----	
273		----		----	
300		----		----	
311	IP501	8		-0.19	
323	IP501	8		-0.19	
328	IP501	9		0.43	
333	IP501	8		-0.19	
334	IP501	8.4		0.06	
342	IP501	8.667		0.22	
352		----		----	
360	IP501	9.4		0.67	
372	IP470	8		-0.19	
381		----		----	
404	IP470	8.9		0.37	
445	IP470	9.7		0.86	
447		----		----	
455	IP501	10		1.04	
467	IP501	9		0.43	
507		----		----	
541	IP501	6		-1.42	
551	IP501	7.99		-0.20	
634		----		----	
657	IP501	6.7		-0.99	
736	IP501	7.94		-0.23	
750		----		----	
781	IP501	8.1		-0.13	
785	IP470	7.97		-0.21	
798		----		----	
823	IP501	9.6		0.80	
824	IP501	8.1		-0.13	
825	IP501	8		-0.19	
840	IP501	10.2		1.17	
873	IP470	7.8		-0.31	
874	IP501	8		-0.19	
875	IP501	8		-0.19	
904	IP501	7.0		-0.81	
963		----		----	
971	IP501	8.3		0.00	
974	IP501	8		-0.19	
994	IP501	7.7		-0.37	
995	IP470	8.2		-0.07	
1011		----		----	
1039	IP501	7		-0.81	
1059	In house	16	R(0.01)	4.75	
1065		----		----	
1108	IP470	7.8		-0.31	
1121	IP501	8.4		0.06	
1134		----		----	
1191	IP501	7.15		-0.71	
1212	IP501	7.40		-0.56	
1264	IP501	7.824		-0.30	
1299		----		----	
1356	IP501	<1		<-4.51	possibly a false negative test result?
1372	IP501	9.81		0.93	
1381		----		----	
1402	IP501	12	R(0.01)	2.28	
1431	IP501	9.42		0.69	
1586	IP470	9		0.43	
1648	IP501	7.59		-0.44	
1720		----		----	
1740	IP501	9.0		0.43	
1741	IP501	7.57		-0.45	
1776		----		----	

Determination of Calcium as Ca on sample #23276; results in mg/kg

lab	method	value	mark	z(targ)	remarks
1813	IP501	9.6203		0.81	
1854	IP501	7.5		-0.50	
1857	IP501	7.9		-0.25	
1862	IP501	7.7		-0.37	
1949	IP470	7.9		-0.25	
1995	IP501	9		0.43	
2129	IP470	8.4		0.06	
6026	IP470	8.5		0.12	
6075		----		----	
6080	IP501	7.8		-0.31	
6092	IP501	10.0		1.04	
6114	IP501	9		0.43	
6142		----		----	
6143		----		----	
6195	IP501	8.8		0.30	
6203	IP501	8.93		0.38	
6204	IP501	8		-0.19	
6226	IP501	8.02		-0.18	
6238		----		----	
6335	D5185	7.09		-0.75	
6373	IP501	7.9500		-0.22	
6388	IP501	7.378		-0.57	
6396	IP501	8.50		0.12	
6406	IP501	2.70	R(0.01)	-3.46	
6438	IP501	8.5		0.12	
6530	IP470	8.5		0.12	
6563	IP501	10.1		1.11	
normality		OK			
n		71			
outliers		4			
mean (n)		8.31			
st.dev. (n)		0.856			
R(calc.)		2.40			
st.dev.(IP470:05)		1.621			
R(IP470:05)		4.54			
compare					
R(IP501:05:R19)		2.55			

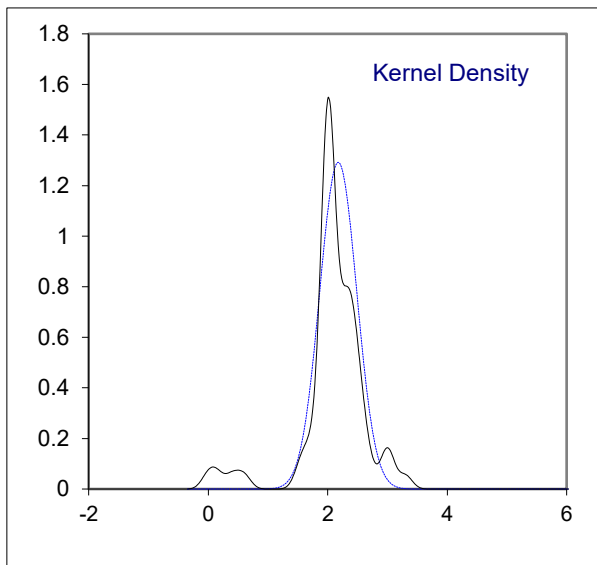
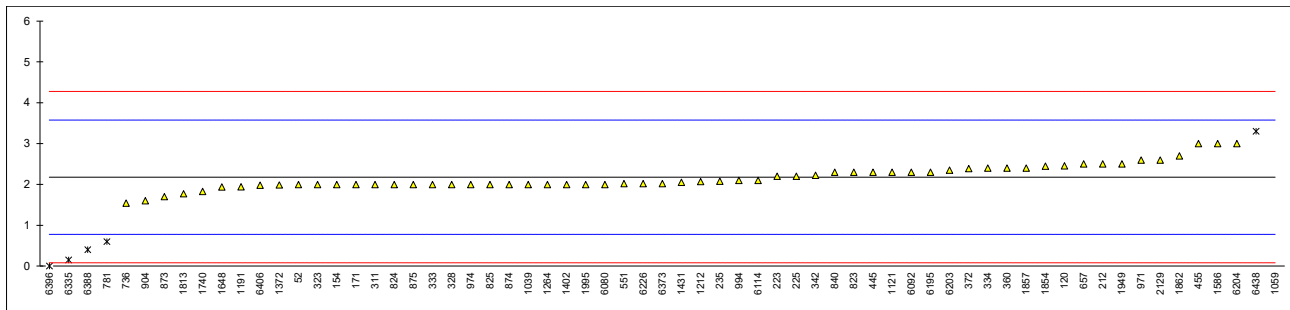


Determination of Phosphorus as P on sample #23276; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
52	IP501	2		-0.25	
120	IP501	2.458		0.40	
150		----		----	
154	IP501	2		-0.25	
159		----		----	
169		----		----	
171	IP501	2		-0.25	
203		----		----	
212	IP501	2.5		0.46	
223	IP501	2.20		0.03	
225	IP501	2.20		0.03	
228		----		----	
235	IP501	2.08		-0.14	
237		----		----	
273		----		----	
300		----		----	
311	IP501	2		-0.25	
323	IP501	2		-0.25	
328	IP501	2		-0.25	
333	IP501	2		-0.25	
334	IP501	2.4		0.32	
342	IP501	2.225		0.07	
352		----		----	
360	IP501	2.4		0.32	
372	IP500	2.39		0.30	
381		----		----	
404		----		----	
445	IP501	2.3		0.18	
447		----		----	
455	IP501	3		1.18	
467	IP501	<1		----	
507		----		----	
541	IP501	<1		----	
551	IP501	2.02		-0.22	
634		----		----	
657	IP501	2.5		0.46	
736	IP501	1.54		-0.91	
750		----		----	
781	IP501	0.6	R(0.01)	-2.25	
785		----		----	
798		----		----	
823	IP501	2.3		0.18	
824	IP501	2.0		-0.25	
825	IP501	2		-0.25	
840	IP501	2.3		0.18	
873	IP500	1.7		-0.68	
874	IP501	2		-0.25	
875	IP501	2		-0.25	
904	IP501	1.6		-0.82	
963		----		----	
971	IP501	2.6		0.61	
974	IP501	2		-0.25	
994	IP501	2.1		-0.11	
995		----		----	
1011		----		----	
1039	IP501	2		-0.25	
1059	In house	8	R(0.01)	8.33	
1065		----		----	
1108		----		----	
1121	IP501	2.3		0.18	
1134		----		----	
1191	IP501	1.945		-0.33	
1212	IP501	2.07		-0.15	
1264	IP501	2.00		-0.25	
1299		----		----	
1356	IP501	<1		----	
1372	IP501	1.99		-0.27	
1381		----		----	
1402	IP501	2		-0.25	
1431	IP501	2.05		-0.18	
1586	IP501	3		1.18	
1648	IP501	1.94		-0.34	
1720		----		----	
1740	IP501	1.83		-0.50	
1741		----		----	
1776		----		----	

Determination of Phosphorus as P on sample #23276; results in mg/kg

lab	method	value	mark	z(targ)	remarks
1813	IP501	1.7722		-0.58	
1854	IP501	2.45		0.39	
1857	IP501	2.4		0.32	
1862	IP501	2.7		0.75	
1949	IP500	2.5		0.46	
1995	IP501	2		-0.25	
2129	IP501	2.6		0.61	
6026		----		----	
6075		----		----	
6080	IP501	2.0		-0.25	
6092	IP501	2.3		0.18	
6114	IP501	2.1		-0.11	
6142		----		----	
6143		----		----	
6195	IP501	2.3		0.18	
6203	IP501	2.35		0.25	
6204	IP501	3		1.18	
6226	IP501	2.02		-0.22	
6238		----		----	
6335	D5185	0.15	R(0.01)	-2.90	
6373	IP501	2.0230		-0.22	
6388	IP501	0.404	R(0.01)	-2.54	
6396	IP501	0	ex	-3.11	excluded as zero is not a real value
6406	IP501	1.98		-0.28	
6438	IP501	3.3	R(0.05)	1.61	
6530		----		----	
6563		----		----	

normality OK
 n 59
 outliers 5 + 1ex
 mean (n) 2.18
 st.dev. (n) 0.309
 R(calc.) 0.87
 st.dev.(IP501:05R19) 0.699
 R(IP501:05R19) 1.96
 compare
 R(IP500:13) 1.65

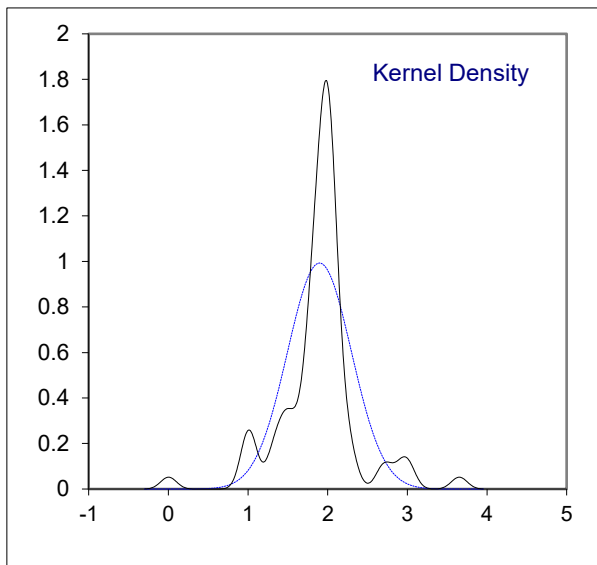
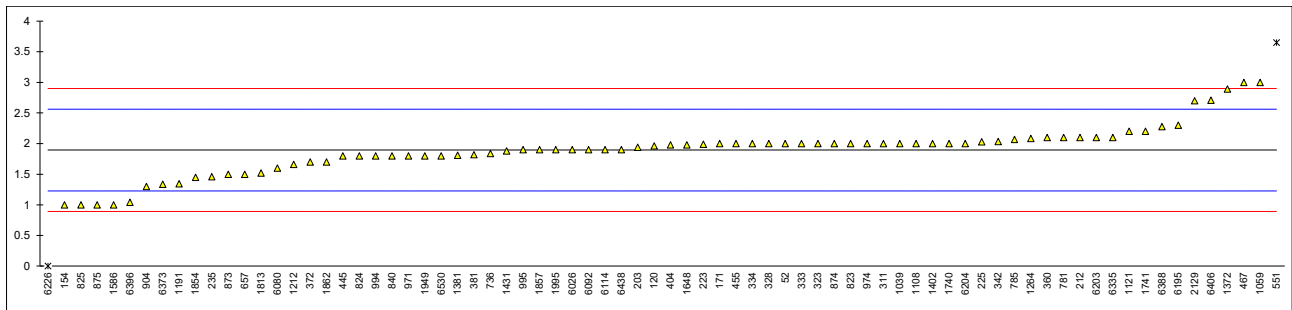


Determination of Zinc as Zn on sample #23276; results in mg/kg					
lab	method	value	mark	z(targ)	remarks
52	IP501	2		0.31	
120	IP501	1.964		0.21	
150		----		----	
154	IP501	1		-2.67	
159		----		----	
169		----		----	
171	IP501	2		0.31	
203	IP470	1.94		0.14	
212	IP501	2.1		0.61	
223	IP501	1.99		0.28	
225	IP501	2.03		0.40	
228		----		----	
235	IP501	1.46		-1.30	
237		----		----	
273		----		----	
300		----		----	
311	IP501	2		0.31	
323	IP501	2		0.31	
328	IP501	2		0.31	
333	IP501	2		0.31	
334	IP501	2.0		0.31	
342	IP501	2.034		0.42	
352		----		----	
360	IP501	2.1		0.61	
372	IP470	1.7		-0.58	
381	IP501	1.82		-0.22	
404	IP470	1.98		0.25	
445	IP501	1.8		-0.28	
447		----		----	
455	IP501	2		0.31	
467	IP501	3		3.30	
507		----		----	
541	IP501	<1		----	
551	IP501	3.65	R(0.01)	5.25	
634		----		----	
657	IP501	1.5		-1.18	
736	IP501	1.84		-0.16	
750		----		----	
781	IP501	2.1		0.61	
785	IP470	2.07		0.52	
798		----		----	
823	IP501	2.0		0.31	
824	IP501	1.8		-0.28	
825	IP501	1		-2.67	
840	IP501	1.8		-0.28	
873	IP470	1.5		-1.18	
874	IP501	2		0.31	
875	IP501	1		-2.67	
904	IP501	1.3		-1.78	
963		----		----	
971	IP501	1.8		-0.28	
974	IP501	2		0.31	
994	IP501	1.8		-0.28	
995	IP470	1.9		0.02	
1011		----		----	
1039	IP501	2		0.31	
1059	In house	3		3.30	
1065		----		----	
1108	IP470	2.0		0.31	
1121	IP501	2.2		0.91	
1134		----		----	
1191	IP501	1.345		-1.64	
1212	IP501	1.66		-0.70	
1264	IP501	2.085		0.57	
1299		----		----	
1356	IP501	<1		----	
1372	IP501	2.89		2.97	
1381	IP501	1.81		-0.25	
1402	IP501	2		0.31	
1431	IP501	1.88		-0.04	
1586	IP470	1		-2.67	
1648	IP501	1.98		0.25	
1720		----		----	
1740	IP501	2.0		0.31	
1741	IP501	2.20		0.91	
1776		----		----	

Determination of Zinc as Zn on sample #23276; results in mg/kg

lab	method	value	mark	z(targ)	remarks
1813	IP501	1.5190		-1.12	
1854	IP501	1.45		-1.33	
1857	IP501	1.9		0.02	
1862	IP501	1.7		-0.58	
1949	IP470	1.8		-0.28	
1995	IP501	1.9		0.02	
2129	IP470	2.7		2.41	
6026	IP470	1.9		0.02	
6075		----		----	
6080	IP501	1.6		-0.88	
6092	IP501	1.9		0.02	
6114	IP501	1.9		0.02	
6142		----		----	
6143		----		----	
6195	IP501	2.3		1.21	
6203	IP501	2.10		0.61	
6204	IP501	2		0.31	
6226	IP501	0	ex,C	-5.66	excluded as zero is not a real value, first reported 0.8
6238		----		----	
6335	D5185	2.10		0.61	
6373	IP501	1.3380		-1.66	
6388	IP501	2.279		1.15	
6396	IP501	1.043		-2.55	
6406	IP501	2.71		2.44	
6438	IP501	1.9		0.02	
6530	IP470	1.8		-0.28	
6563		----		----	

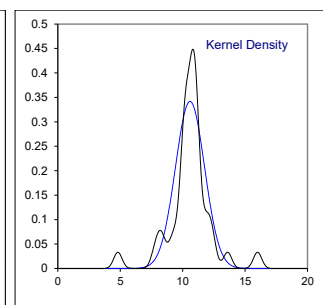
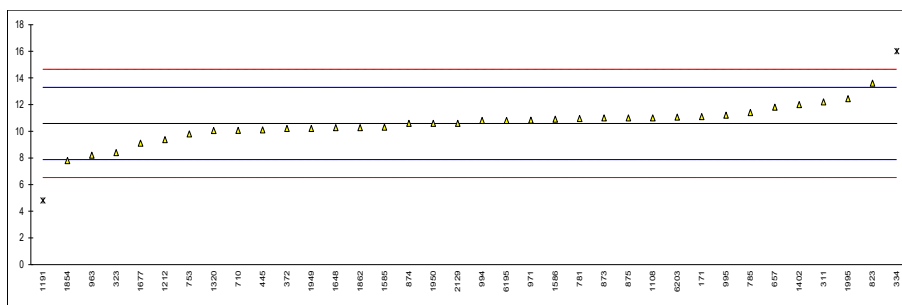
normality suspect
n 74
outliers 1 + 1ex
mean (n) 1.89
st.dev. (n) 0.402
R(calc.) 1.13
st.dev.(IP470:05) 0.335
R(IP470:05) 0.94
compare
R(IP501:05:19) 0.79



Determination of Bromine Number on distillate <360 °C AET on sample #23277; results in g Br₂/100 g

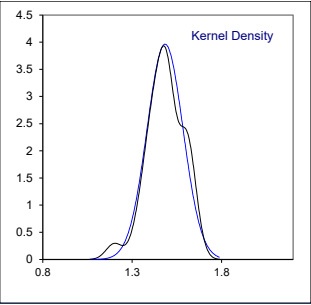
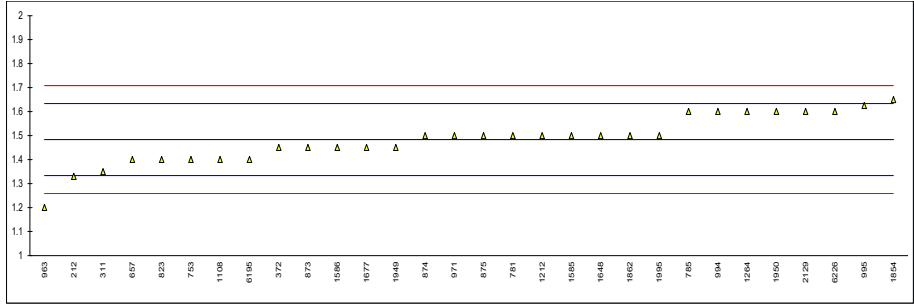
lab	method	value	mark	z(targ)	remarks
120		----		----	
150		----		----	
171	D1159	11.1		0.38	
212		----		----	
311	D1159	12.2		1.19	
323	D1159	8.4		-1.62	
334	D1159	16	R(0.01)	4.00	
372	D1159	10.2		-0.29	
445	D1159	10.1		-0.36	
467		----		----	
657	D1159	11.8		0.89	
710	D1159	10.06		-0.39	
750		----		----	
753	D1159	9.8		-0.58	
781	D1159	10.96		0.27	
785	D1159	11.4		0.60	
798		----		----	
823	D1159	13.6		2.22	
873	D1159	11.0		0.30	
874	D1159	10.6		0.01	
875	D1159	11.0		0.30	
963	D1159	8.2		-1.76	
971	D1159	10.84		0.19	
994	D1159	10.8		0.16	
995	D1159	11.2		0.45	
1026		----		----	
1065		----		----	
1108	D1159	11.0		0.30	
1134		----		----	
1191	ISO3839Mod.	4.81	R(0.01)	-4.27	
1212	D1159	9.367		-0.90	
1264		----		----	
1299		----		----	
1320	D1159	10.05		-0.40	
1402	D1159	12		1.04	
1585	D1159	10.3		-0.21	
1586	D1159	10.9		0.23	
1648	D1159	10.27		-0.24	
1677	D1159	9.1		-1.10	
1741		----		----	
1854		7.80		-2.06	
1862	D1159	10.27		-0.24	
1949	D1159	10.2		-0.29	
1950	D1159	10.6		0.01	
1995	D1159	12.44		1.37	
2129	D1159	10.6		0.01	
6112		----		----	
6143		----		----	
6195	D1159	10.8		0.16	
6203	D1159	11.069		0.35	
6226		----		----	
6406		----		----	
6438		----		----	
6505		----		----	

normality suspect
n 34
outliers 2
mean (n) 10.589
st.dev. (n) 1.1674
R(calc.) 3.269
st.dev.(D1159:23) 1.3539
R(D1159:23) 3.791



Determination of P-value SMS1600 on sample #23277

lab	method	value	mark	z(targ)	remarks
120		----		----	
150		----		----	
171		----		----	
212	SMS1600	1.33		-2.05	
311	SMS1600	1.35		-1.78	
323		----		----	
334		----		----	
372	SMS1600	1.45		-0.45	
445		----		----	
467		----		----	
657	SMS1600	1.40		-1.11	
710		----		----	
750		----		----	
753	SMS1600	1.40		-1.11	
781	SMS1600	1.50		0.22	
785	SMS1600	1.6		1.55	
798		----		----	
823	SMS1600	1.4		-1.11	
873	SMS1600	1.45		-0.45	
874	SMS1600	1.5		0.22	
875	SMS1600	1.50		0.22	
963	INH-001	1.2		-3.78	
971	SMS1600	1.5	C	0.22	first reported 1.2
994	SMS1600	1.6		1.55	
995	SMS1600	1.625		1.89	
1026		----		----	
1065		----		----	
1108	SMS1600	1.4		-1.11	
1134		----		----	
1191		----		----	
1212	SMS1600	1.5		0.22	
1264	SMS1600	1.6	C	1.55	first reported 1.2
1299		----		----	
1320		----		----	
1402		----		----	
1585	SMS1600	1.50		0.22	
1586	SMS1600	1.45		-0.45	
1648	SMS1600	1.5		0.22	
1677	SMS1600	1.45		-0.45	
1741		----		----	
1854	SMS1600	1.65		2.22	
1862	SMS1600	1.50		0.22	
1949	SMS1600	1.45		-0.45	
1950	SMS1600	1.6		1.55	
1995	SMS1600	1.5		0.22	
2129	SMS1600	1.6		1.55	
6112		----		----	
6143		----		----	
6195	SMS1600	1.4		-1.11	
6203		----		----	
6226	SMS1600	1.60		1.55	
6406		----		----	
6438		----		----	
6505		----		----	
normality		OK			
n		30			
outliers		0			
mean (n)		1.483			
st.dev. (n)		0.1007			
R(calc.)		0.282			
st.dev.(SMS1600)		0.0750			
R(SMS1600)		0.210			



Dermination of P-ratio, FR _{max} and Po D7060 on sample #23277											
lab	method	P-ratio	mark	z(targ)	FR _{max}	mark	z(targ)	Po	mark	z(targ)	
120		----		----	----		----	----		----	
150		----		----	----		----	----		----	
171		----		----	----		----	----		----	
212	D7060	1.07		----	71		----	76		----	
311	D7060	1.25		----	66		----	82		----	
323		----		----	----		----	----		----	
334		----		----	----		----	----		----	
372		----		----	----		----	----		----	
445		----		----	----		----	----		----	
467		----		----	----		----	----		----	
657		----		----	----		----	----		----	
710		----		----	----		----	----		----	
750		----		----	----		----	----		----	
753		----		----	----		----	----		----	
781		----		----	----		----	----		----	
785		----		----	----		----	----		----	
798		----		----	----		----	----		----	
823		----		----	----		----	----		----	
873		----		----	----		----	----		----	
874		----		----	----		----	----		----	
875		----		----	----		----	----		----	
963		----		----	----		----	----		----	
971		----		----	----		----	----		----	
994		----		----	----		----	----		----	
995		----		----	----		----	----		----	
1026	D7060	-1.0	E	----	-1		----	-1		----	
1065		----		----	----		----	----		----	
1108		----		----	----		----	----		----	
1134		----		----	----		----	----		----	
1191		----		----	----		----	----		----	
1212		----		----	----		----	----		----	
1264		----		----	----		----	----		----	
1299		----		----	----		----	----		----	
1320		----		----	----		----	----		----	
1402		----		----	----		----	----		----	
1585		----		----	----		----	----		----	
1586		----		----	----		----	----		----	
1648		----		----	----		----	----		----	
1677		----		----	----		----	----		----	
1741		----		----	----		----	----		----	
1854		----		----	----		----	----		----	
1862		----		----	----		----	----		----	
1949		----		----	----		----	----		----	
1950		----		----	----		----	----		----	
1995		----		----	----		----	----		----	
2129		----		----	----		----	----		----	
6112		----		----	----		----	----		----	
6143		----		----	----		----	----		----	
6195		----		----	----		----	----		----	
6203		----		----	----		----	----		----	
6226	D7060	1.83		----	47.69		----	87.4		----	
6406		----		----	----		----	----		----	
6438		----		----	----		----	----		----	
6505	D7157	1.97		----	0.33		----	----		----	

Lab 1026 calculation difference, iis calculated 1

Determination of P-value, Pa, Po, SE and FR _{5/1} D7112 on sample #23277											
lab	method	P-value	mark	Pa	mark	Po	mark	SE	mark	FR _{5/1}	mark
120											
150											
171											
212											
311											
323											
334											
372											
445											
467											
657											
710											
750											
753											
781											
785											
798											
823											
873											
874											
875											
963											
971											
994											
995											
1026											
1065											
1108											
1134											
1191											
1212											
1264											
1299											
1320											
1402											
1585											
1586											
1648											
1677											
1741											
1854											
1862											
1949											
1950											
1995											
2129											
6112											
6143											
6195											
6203											
6226											
6406											
6438											
6505	D7157			0.67		0.65					

Determination of Separability Number D7061 on sample #23277; results in %T					
lab	method	value	mark	z(targ)	remarks
120		----		----	
150		----		----	
171		----		----	
212		----		----	
311		----		----	
323		----		----	
334		----		----	
372		----		----	
445		----		----	
467		----		----	
657		----		----	
710		----		----	
750		----		----	
753		----		----	
781	D7061	5.2		----	
785		----		----	
798		----		----	
823		----		----	
873		----		----	
874		----		----	
875		----		----	
963		----		----	
971		----		----	
994		----		----	
995		----		----	
1026		----		----	
1065		----		----	
1108		----		----	
1134		----		----	
1191		----		----	
1212		----		----	
1264	D7061	0.2		----	
1299		----		----	
1320		----		----	
1402		----		----	
1585		----		----	
1586		----		----	
1648		----		----	
1677		----		----	
1741		----		----	
1854		----		----	
1862		----		----	
1949		----		----	
1950		----		----	
1995		----		----	
2129		----		----	
6112		----		----	
6143		----		----	
6195		----		----	
6203		----		----	
6226		----		----	
6406		----		----	
6438		----		----	
6505	D7061	2.685		----	

Determination of Toluene dilution ratio D7061 on sample #23277					
lab	method	value	mark	z(targ)	remarks
120		----		----	
150		----		----	
171		----		----	
212		----		----	
311		----		----	
323		----		----	
334		----		----	
372		----		----	
445		----		----	
467		----		----	
657		----		----	
710		----		----	
750		----		----	
753		----		----	
781	D7061	1:3		----	
785		----		----	
798		----		----	
823		----		----	
873		----		----	
874		----		----	
875		----		----	
963		----		----	
971		----		----	
994		----		----	
995		----		----	
1026		----		----	
1065		----		----	
1108		----		----	
1134		----		----	
1191		----		----	
1212		----		----	
1264	D7061	1:9		----	
1299		----		----	
1320		----		----	
1402		----		----	
1585		----		----	
1586		----		----	
1648		----		----	
1677		----		----	
1741		----		----	
1854		----		----	
1862		----		----	
1949		----		----	
1950		----		----	
1995		----		----	
2129		----		----	
6112		----		----	
6143		----		----	
6195		----		----	
6203		----		----	
6226		----		----	
6406		----		----	
6438		----		----	
6505		----		----	

Determination of Compatibility rating on sample #23278;						
lab	method	value	mark	z(targ)	remarks	remarks
52	D4740 Manual	3		-3.96	---	
120	D4740 Manual	5		1.64	---	
154	D4740 Manual	5		1.64	---	
171	D4740 Manual	5		1.64	---	
212	D4740 Manual	4		-1.16	Copy of the original card	
223	D4740 Automated	1	R(0.01)	-9.56	Reference. Spot Description (ASTM D4740 Table 1)	
225		----		----	---	
228	D4740 Manual	1	R(0.01)	-9.56	---	
235	D4740 Manual	3		-3.96	Reference. Spot Description (ASTM D4740 Table 1)	
237		----		----	---	
300	D4740 Manual	4	C	-1.16	Reference. Spot Description (ASTM D4740 Table 1)	fr. 1
311	D4740 Manual	4		-1.16	Reference. Spot Description (ASTM D4740 Table 1)	
323	D4740 Manual	5		1.64	Copy of the original card	
342	D4740 Manual	1	R(0.01)	-9.56	Reference. Spot Description (ASTM D4740 Table 1)	
352		----		----	---	
360	D4740 Manual	4		-1.16	Reference. Spot Description (ASTM D4740 Table 1)	
372	D4740 Manual	5		1.64	Original card	
445		----		----	---	
447		----		----	---	
467	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
507		----		----	---	
541	D4740 Manual	1	R(0.01)	-9.56	---	
551		----		----	---	
657	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
671	D4740 Manual	5	C	1.64	Original card	fr. 1
750		----		----	---	
752	D4740 Manual	4		-1.16	According to Reference Spot Description (ASTM D4740 Table 1)	
781	D4740 Manual	4		-1.16	Original card	
785	D4740 Manual	5		1.64	---	
823	D4740 Automated	5		1.64	Copy of the original card	
840	D4740 Manual	4		-1.16	Copy of the original card	
872	D4740 Manual	4	C	-1.16	Reference. Spot Description (ASTM D4740 Table 1)	fr. 2
873	D4740 Manual	4	C	-1.16	Copy of the original card	fr. 2
874	D4740 Manual	4		-1.16	---	
875	D4740 Manual	5		1.64	---	
963		----		----	---	
971	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
974	D4740 Manual	5		1.64	Original card	
995	D4740 Manual	4		-1.16	Copy of the original card	
1065	D4740 Manual	5	C	1.64	---	fr. 1
1121	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
1134		----		----	---	
1191	D4740 Manual	1	R(0.01)	-9.56	---	
1212	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
1264	D4740 Manual	5.0		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
1299	D4740 Manual	4		-1.16	---	
1431	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
1438	D4740 Automated	3		-3.96	---	
1585	D4740 Manual	4		-1.16	Copy of the original card	
1586	D4740 Manual	4		-1.16	Reference. Spot Description (ASTM D4740 Table 1)	
1681	D4740 Manual	3		-3.96	According to Reference Spot Description (ASTM D4740 Table 1)	
1740	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
1854	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
1995	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
2129	D4740 Manual	5		1.64	---	
6112	D4740 Manual	3		-3.96	---	
6143	D4740 Manual	4		-1.16	Copy of the original card	
6226	D4740 Manual	5		1.64	Reference. Spot Description (ASTM D4740 Table 1)	
6238		----		----	---	
6373	D4740 Manual	4		-1.16	Copy of the original card	
6406	D4740 Manual	4		-1.16	Original card	
6438	D4740 Manual	5		1.64	---	
					<u>According. to Ref. Spot only</u>	<u>(Copy of) original card only</u>
	normality	OK			OK	OK
	n	46			19	14
	outliers	5			2	0
	mean (n)	4.41			4.47	4.36
	st.dev. (n)	0.686			0.697	0.497
	R(calc.)	1.92			1.95	1.39
	st.dev.(D4740-M:20)	0.357			0.357	0.357
	R(D4740-M:20)	1			1	1

APPENDIX 2**Number of participants per country**

1 lab in ARGENTINA	1 lab in LIBERIA
1 lab in AUSTRALIA	1 lab in MALI
1 lab in AUSTRIA	1 lab in MALTA
1 lab in AZERBAIJAN	1 lab in MARTINIQUE
3 labs in BELGIUM	1 lab in MAURITIUS
1 lab in BRAZIL	1 lab in MOROCCO
2 labs in BULGARIA	8 labs in NETHERLANDS
1 lab in CANADA	2 labs in NIGERIA
1 lab in COLOMBIA	1 lab in NORTH MACEDONIA, Republic of
1 lab in CONGO Brazzaville	1 lab in PANAMA
1 lab in COTE D'IVOIRE	2 labs in PHILIPPINES
1 lab in CROATIA	3 labs in PORTUGAL
2 labs in CZECH REPUBLIC	2 labs in ROMANIA
1 lab in DENMARK	17 labs in RUSSIAN FEDERATION
1 lab in DJIBOUTI	4 labs in SAUDI ARABIA
3 labs in EGYPT	2 labs in SERBIA
4 labs in ESTONIA	1 lab in SINGAPORE
4 labs in FINLAND	1 lab in SLOVAKIA
4 labs in FRANCE	1 lab in SLOVENIA
2 labs in GEORGIA	1 lab in SOUTH AFRICA
2 labs in GERMANY	7 labs in SPAIN
11 labs in GREECE	1 lab in SUDAN
1 lab in GUAM	3 labs in SWEDEN
1 lab in INDONESIA	1 lab in TAIWAN
1 lab in IRAQ	2 labs in TANZANIA
2 labs in IRELAND	1 lab in TOGO
2 labs in ISRAEL	1 lab in TURKIYE
1 lab in ITALY	2 labs in TURKMENISTAN
2 labs in KAZAKHSTAN	5 labs in UNITED ARAB EMIRATES
1 lab in KENYA	8 labs in UNITED KINGDOM
1 lab in KINGDOM OF BAHRAIN	8 labs in UNITED STATES OF AMERICA
3 labs in KOREA, Republic of	1 lab in VIETNAM

APPENDIX 3

Abbreviations

C	= final test result after checking of first reported suspect test result
D(0.01)	= outlier in Dixon's outlier test
D(0.05)	= straggler in Dixon's outlier test
G(0.01)	= outlier in Grubbs' outlier test
G(0.05)	= straggler in Grubbs' outlier test
DG(0.01)	= outlier in Double Grubbs' outlier test
DG(0.05)	= straggler in Double Grubbs' outlier test
R(0.01)\R(1)	= outlier in Rosner's outlier test
R(0.05)\R(5)	= straggler in Rosner's outlier test
E	= calculation difference between reported test result and result calculated by iis
W	= test result withdrawn on request of participant
ex	= test result excluded from statistical evaluation
n.a.	= not applicable
n.e.	= not evaluated
n.d.	= not detected
fr.	= first reported
f+?	= possibly a false positive test result?
f-?	= possibly a false negative test result?
SDS	= Safety Data Sheet

Literature

- 1 iis Interlaboratory Studies, Protocol for the Organisation, Statistics & Evaluation, June 2018
- 2 ISO5725:86
- 3 ISO5725 parts 1-6:94
- 4 ISO13528:05
- 5 M. Thompson and R. Wood, J. AOAC Int, 76, 926, (1993)
- 6 W.J. Youden and E.H. Steiner, Statistical Manual of the AOAC, (1975)
- 7 P.L. Davies, Fr. Z. Anal. Chem, 331, 513, (1988)
- 8 J.N. Miller, Analyst, 118, 455, (1993)
- 9 Analytical Methods Committee, Technical Brief, No 4, January 2001
- 10 P.J. Lowthian and M. Thompson, The Royal Society of Chemistry, Analyst, 127, 1359-1364, (2002)
- 11 W. Horwitz and R. Albert, J. AOAC Int, 79.3, 589-621, (1996)
- 12 Bernard Rosner, Percentage Points for a Generalized ESD Many-Outlier Procedure, Technometrics, 25(2), 165-172, (1983)

Address: Malledijk 18, P.O. Box 200, 3200 AE Spijkenisse, The Netherlands
Telephone number: +31 (0)88 214 45 41
Email address: nl.iis@sgs.com
Website: www.iisnl.com

Institute for Interlaboratory Studies is a full member of SGS Nederland B.V. and registered at the Chamber of Commerce under number: 24226722. Unless otherwise agreed, all orders are executed in accordance with the SGS general conditions.